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INFANT AND MATERNAL MORTALITY IN THE UNITED STATES

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INFANT MORTALITY

The accompanying graphs show the downward trend in infant mortality during the 10 years from 1915 to 1924. The provisional figures for 1925 and 1926 show a slight rise; but in view of the fluctuations shown in the curves this is probably not significant. In the period for 1915 to 1924, for which we have complete data for the white and colored races in both rural and urban areas, it will be seen from the table and graphs that there was a decrease of 29 per cent in the total infant mortality rate in the registration area. The decreases in the rates for the urban and rural areas were very similar—30 per cent for the urban and 27 per cent for the rural. The improvements in the rate for white infants in the total registration area, in the urban area, and in the rural area are strikingly similar—32 per cent, 32 per cent, and 31 per cent, respectively.

With the exception of urban areas, the rate for colored infants has decreased to a greater extent than has that for white infants. The improvement in rural areas is striking. The mortality rate among colored babies in the country has decreased 42 per cent in the decade under consideration. This is interesting in view of the fact that undoubtedly no class of the infant population has been less affected by so-called infant welfare work. It apparently behooves us to learn what is lacking in our present methods, or, to be more fundamental, what are the most important causes of infant mortality. It may be that we are spending our ammunition on snipers while the heavy battalions of the enemy are mowing down our lines.

It is doubtless true that improper feeding is responsible for a part of the infant mortality. The studies of the United States Public Health Service in the use of dried-milk powder in infant feeding pointed the way to a possible lowering of infant mortality from intestinal causes by a wider use of this product in localities where pure fresh milk is not available.

A very large proportion of the total infant mortality takes place within the first month of life. The Public Health Service has recently

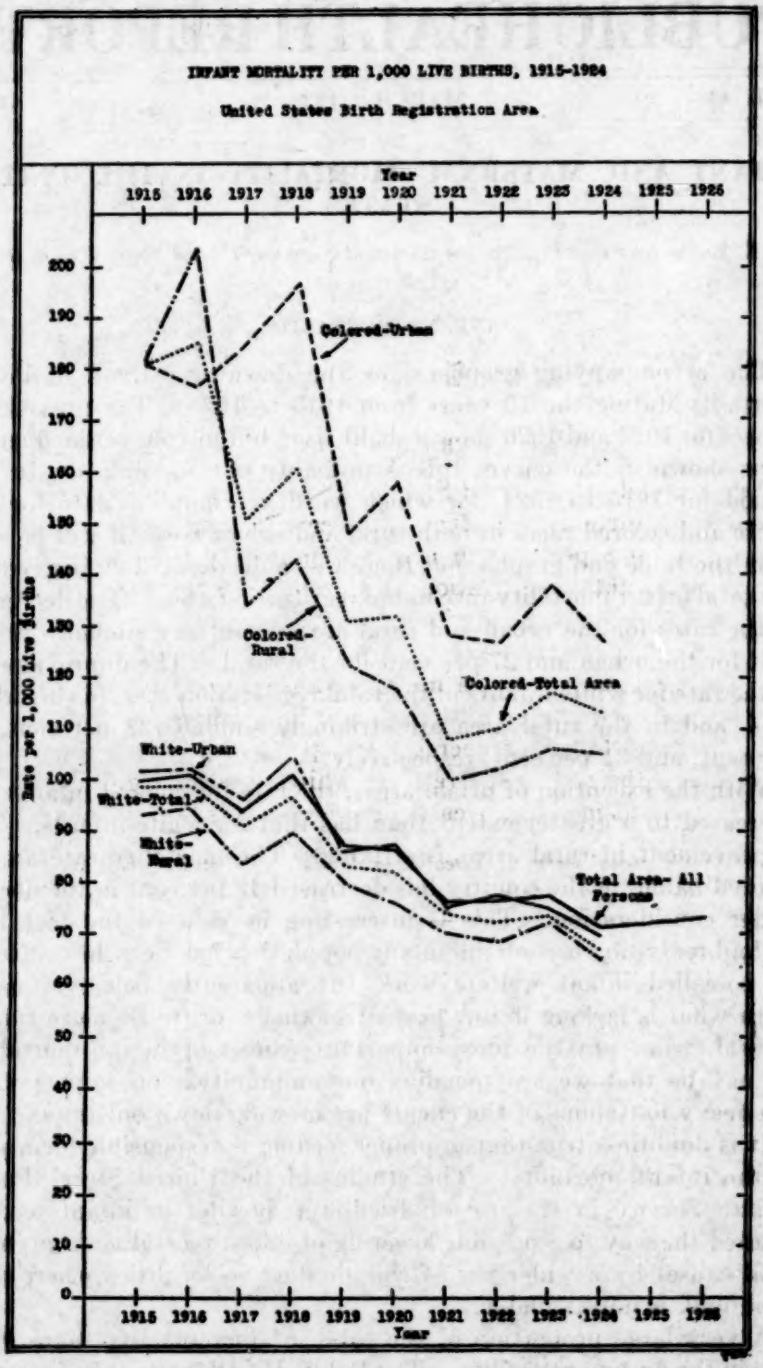
INFANT MORTALITY PER 1,000 LIVE BIRTHS, 1915-1926
United States Birth Registration Area
Year
1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926
Rate per 1,000 Live Births
200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0
Colored-Urban
Colored-Rural
Colored-Total Area
White-Urban
White-Total
White-Rural
Total Area- All Persons
1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926
Year

FIG. 1

issued a statistical study of the problem of fetal and neonatal death which sums up our present knowledge of the subject.[1] This study emphasizes the need of further research.

TABLE 1.—*Infant mortality: Death rates per 1,000 live births*

	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	Provisional, 1926
Total	100	101	94	101	87	86	76	76	77	71	72	73
White	99	99	91	97	83	82	72	73	73	67	.....	.....
Colored	181	185	151	161	131	132	108	110	117	113	.....	.....
Urban	103	104	100	108	89	91	78	80	78	72	.....	.....
White	102	102	96	105	86	87	75	77	75	69	.....	.....
Colored	181	177	185	197	148	158	128	127	138	127	.....	.....
Rural	94	97	88	94	84	81	74	72	76	69	.....	.....
White	94	95	84	90	80	76	70	69	72	65	.....	.....
Colored	182	203	134	143	123	118	100	102	106	105	.....	.....

MATERNAL MORTALITY

Unfortunately the United States can not show a downward trend in maternal mortality. In fact, the accompanying tables and graphs show a rise of 8 per cent in maternal mortality from all puerperal causes in the total registration area from 1915 to 1924. In urban areas there has been a rise of 14 per cent—from 6.4 to 7.3 per 1,000 live births. The rural areas show an increase of 5 per cent. The only decrease shown in the maternal mortality from all puerperal causes is in the rate for white mothers in rural sections, which has fallen from 5.5 to 5.1—a decrease of 7 per cent. In the total registration area the rise in the rate for whites is very slight—less than 2 per cent—but in urban areas alone the rise has been 11 per cent.

TABLE 2.—*Maternal mortality: Death rates per 1,000 live births from all puerperal causes*

	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
All puerperal causes:										
Total	6.1	6.2	6.6	9.2	7.4	8.0	6.8	6.6	6.7	6.6
White	6.0	6.1	6.3	8.9	7.0	7.6	6.4	6.3	6.3	6.1
Colored	10.6	11.8	11.8	13.9	12.4	12.8	10.8	10.7	10.9	11.8
Urban:										
Total	6.4	6.5	7.0	9.6	7.9	8.6	7.7	7.3	7.4	7.3
White	6.3	6.3	6.7	9.3	7.6	8.2	7.4	7.0	7.1	7.0
Colored	11.0	12.8	13.8	16.7	13.9	15.1	13.1	12.4	12.3	12.9
Rural:										
Total	5.5	5.7	6.2	8.7	6.9	7.4	5.9	5.9	5.9	5.8
White	5.5	5.7	5.9	8.4	6.3	6.9	5.4	5.5	5.3	5.1
Colored	8.3	9.7	10.8	12.5	11.8	11.7	9.7	9.8	10.2	11.1

[1] The Problem of Fetal and Neonatal Death. By E. Blanche Sterling. PUB. HEALTH REP., vol. 42, No. 11 (Mar. 18, 1927), pp. 717-751. Reprint No. 1146.

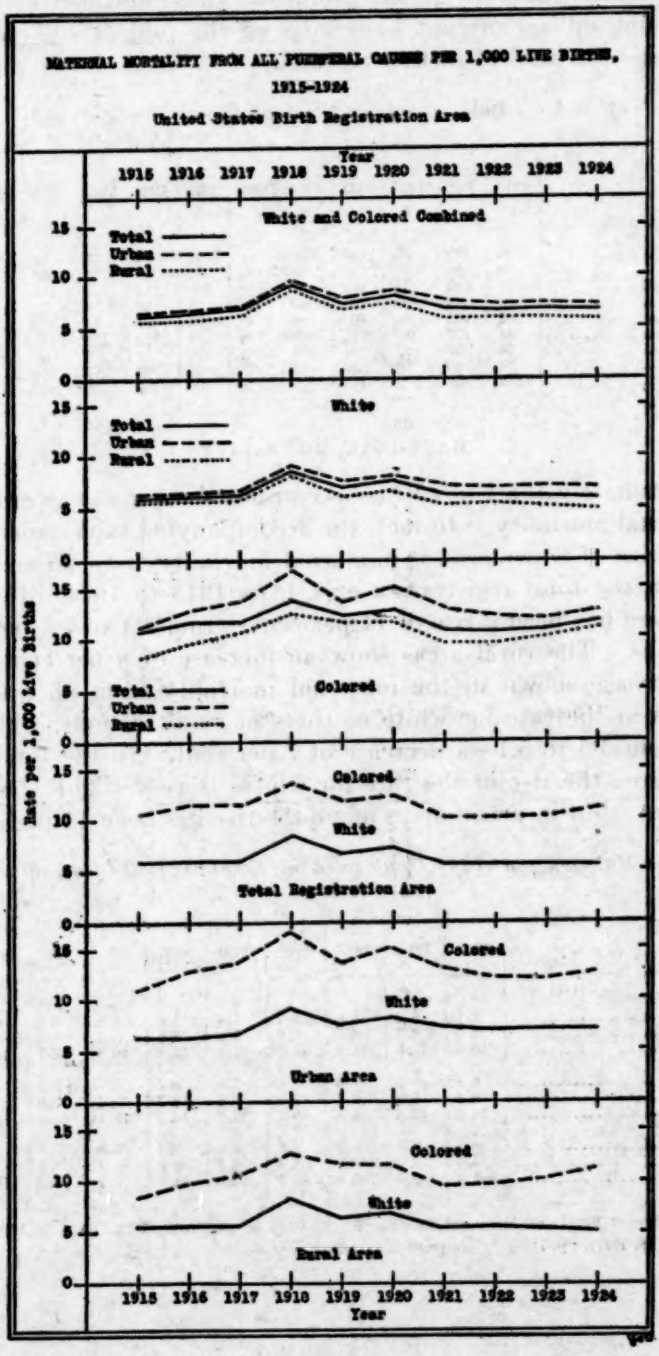
MATERNAL MORTALITY FROM ALL PUERPERAL CAUSES PER 1,000 LIVE BIRTHS, 1915-1924
United States Birth Registration Area
Year
1915 1916 1917 1918 1919 1920 1921 1922 1923 1924
White and Colored Combined
Total
Urban
Rural
White
Colored
Rate per 1,000 Live Births
Total Registration Area
Urban Area
Rural Area
0
5
10
15

FIG. 2

TABLE 3.—*Maternal mortality: Death rates per 1,000 live births from puerperal septicemia*

	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
Total	2.4	2.5	2.7	2.5	2.5	2.7	2.7	2.4	2.5	2.4
White	2.3	2.5	2.6	2.4	2.3	2.6	2.6	2.3	2.4	2.3
Colored	5.2	5.2	4.8	4.3	4.1	4.0	3.9	3.9	3.8	4.0
Urban:										
Total	2.7	2.9	3.2	2.9	2.9	3.2	3.3	2.8	3.1	2.9
White	2.6	2.8	3.0	2.8	2.8	3.0	3.2	2.7	2.9	2.8
Colored	5.7	6.3	6.9	6.6	5.8	6.2	5.7	5.3	5.6	5.2
Rural:										
Total	1.9	1.9	2.3	2.2	2.0	2.2	2.1	1.9	1.9	1.9
White	1.9	1.9	2.2	2.1	1.8	2.1	2.0	1.8	1.8	1.7
Colored	2.9	2.8	3.7	3.1	3.3	2.9	3.1	3.2	2.9	3.3

TABLE 4.—*Maternal mortality: Death rates per 1,000 live births from puerperal causes other than puerperal septicemia*

	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
Other puerperal causes:										
Total	3.7	3.7	3.9	6.6	4.9	5.3	4.1	4.2	4.1	4.1
White	3.7	3.6	3.7	6.4	4.6	5.0	3.8	4.0	3.9	3.8
Colored	5.3	6.6	7.0	9.6	8.4	8.8	6.9	6.8	7.1	7.8
Urban:										
Total	3.7	3.6	3.8	6.7	4.9	5.4	4.4	4.5	4.3	4.4
White	3.7	3.6	3.7	6.6	4.8	5.2	4.2	4.3	4.2	4.2
Colored	5.3	6.4	6.9	10.1	8.1	8.9	7.4	7.1	6.7	7.7
Rural:										
Total	3.6	3.8	3.9	6.5	4.9	5.2	3.8	4.0	4.0	3.8
White	3.6	3.7	3.7	6.3	4.5	4.8	3.4	3.7	3.5	3.4
Colored	5.4	6.9	7.0	9.4	8.5	8.8	6.6	6.6	7.3	7.8

TABLE 5.—*Maternal mortality: Death rates per 100,000 estimated population*

Cause	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924
Accidents of pregnancy	1.4	1.4	1.4	5.2	2.5	2.7	1.4	1.5	1.6	1.4
Puerperal hemorrhage	1.5	1.6	1.6	1.5	1.4	1.6	1.7	1.5	1.5	1.5
Other accidents of labor	1.5	1.7	1.6	4.1	2.5	2.6	1.7	1.9	1.8	1.7
Albuminuria and convulsions	4.0	4.3	4.5	4.5	4.2	4.9	4.5	4.3	4.1	4.3
Puerperal septicemia	6.3	6.7	7.0	6.5	5.8	6.6	6.8	5.7	5.8	5.8

A study of the rates for colored mothers shows increases in the total registration area, in the urban, and in the rural area, of 11 per cent, 17 per cent, and 34 per cent, respectively.

A study of Tables 2, 3, and 4 shows that of the maternal mortality due to all puerperal causes in 1924 in the total registration area, that due to puerperal septicemia comprised over 36 per cent of the total, and more than 58 per cent of that due to all other puerperal causes. This appears to be the greatest single cause of puerperal mortality, but Table 3 does not indicate that this cause accounts for the slight rising trend of maternal mortality. Though there is a slight increase from this cause in the total urban rate and in the rates of white city women and colored country women, in every other instance the rates show a tendency either to fall or to remain more or less stationary.

It is possible that an examination of other causes of puerperal mortality may shed some light on the question. Data for the rates per 1,000 live births for the specific causes of puerperal mortality are not available, but the death rates per 100,000 estimated population from these specific causes are shown in Table 5. These include the more important causes of puerperal mortality and cover the same period under consideration, 1915–1924.

In two of these causes—other accidents of labor (puerperal hemorrhage having been eliminated) and albuminuria and convulsions—

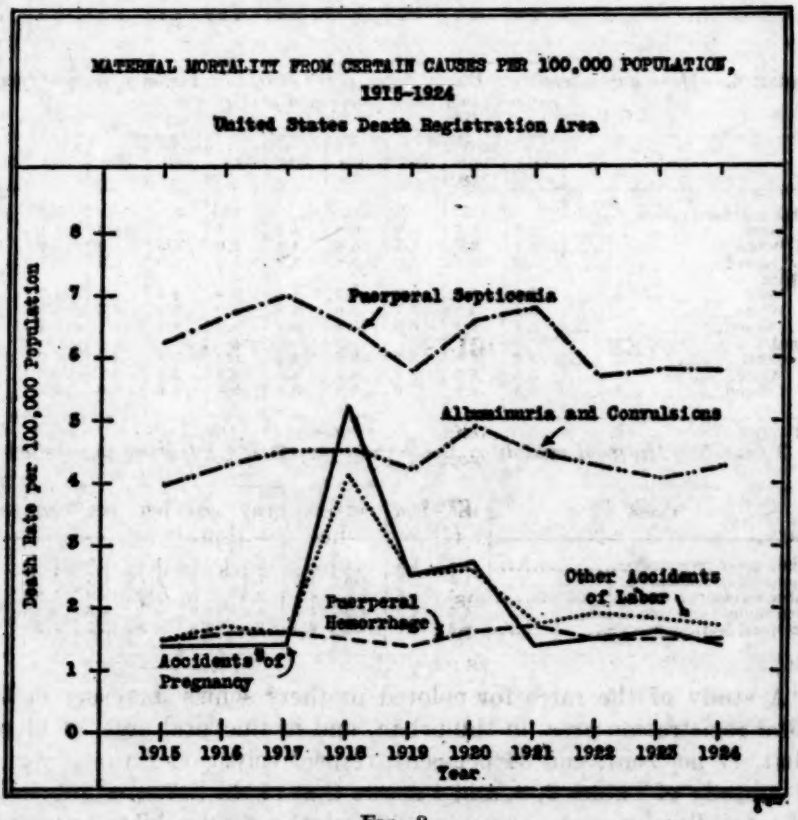

FIG. 3

there seems to be a slight rising tendency. The rate for the former has risen 13.3 per cent and for the latter more than 7.5 per cent. The indications are that the more careful management of normal labor and its complications should be emphasized in any endeavor to reduce the death rate from puerperal causes.

BIRTH AND DEATH REGISTRATION

There continues to be a gradual expansion of the birth and death registration areas, and the birth registration area has almost caught up with the death registration area. There are now 42 States, the

District of Columbia, and 21 registration cities in nonregistration States in the death registration area. This includes 91.3 per cent of the total population of the United States. Of the remaining 6 States, 4 have good registration laws which have not been in force long enough to bring registration up to 90 per cent, as required for acceptance into the registration area, and 2 have unsatisfactory laws which can not secure good registration.

In the birth registration area there are 40 States and the District of Columbia, which, together, include 87.3 per cent of the total population of the country. Six other States have good laws which are yet too new to have brought the registration of births up to the required 90 per cent. Two States have unsatisfactory laws. Considerable progress was made in stimulating both death and birth registration during 1927, one State having been added to the death registration area and five States to the birth registration area. The Bureau of the Census is carrying on a special campaign looking toward the inclusion of every State in the registration area before 1930.

MALTA FEVER: A PROBLEM FOR STATE AND MUNICIPAL LABORATORIES

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There is, at present, a growing interest in Malta fever. This began in 1924, when Keefer (1) published the report of a case due to *Br. melitensis* var. *abortus*. The previous work of Evans (2), who established the close relationship between the *Br. melitensis* of Malta fever and the organism of contagious abortion of cattle, suggested this possibility. Much work has since been done in the attempt to prove the source of the few scattered human cases which have been diagnosed in this country, and different conclusions have been reached. The prevalence of contagious abortion in cattle and the apparent infrequence of Malta fever has caused some investigators to question the etiological relation of the former to the latter. Others, however, agree with Huddleson (3) who suggested that there have been, and now may be, many cases of this disease which are not diagnosed. The lack of pathognomonic symptoms or signs makes this probable. The findings of Hull and Black (4), Orr and Huddleson (5), and our own, support this opinion. It is urged by See (6) that the disease simulates typhoid, paratyphoid, influenza, acute articular rheumatism, tuberculosis and certain forms of malaria. Because this is true, Evans (7) has pointed out that "there is no disease in which the physician is more dependent upon laboratory findings for a correct

diagnosis," and has also advised that more examinations for Malta fever be done.

The State and municipal laboratories have an unusual opportunity to contribute to the study of Malta fever. Blood will be received from a large proportion of patients with a prolonged undiagnosed fever. At the present time, few general practitioners think of the possibility of meeting Malta fever, but typhoid or paratyphoid will be considered. Having these in mind, blood will be sent for a Widal test. Our findings indicate that in all such cases an examination for Malta fever should be done. The laboratory should take the lead here and investigate in a direction not requested by the physician. Only when the disease becomes generally known and clinically suspected should the laboratory worker wait for the physicians to request the examination.

In tabular form the findings for six months at the Iowa State Laboratory are summarized. During this period, blood specimens sent for Widal tests were examined for Malta fever. The difference in the number of tests which were made during the first three months and the last three months demands explanation. Eighty per cent of the specimens received are dried blood. During the first three months only wet blood specimens were tested for Malta fever. The probability of detecting additional cases through the examination of dried blood suggested itself, and this was started early in September. On the first day that this was done, one specimen gave a marked agglutination of the organisms, so the procedure has since been adopted as a routine. The technique and the interpretation of the tests will be discussed in a later part of the paper.

Results of blood examinations for Malta fever at the Iowa State Laboratory during a six-month period

Month	Agglutination tests for Malta fever	Positive agglutination tests	Positive cases	Confirmed positive cases	Unconfirmed positive cases
June	32	4	3	2	1
July	27	5	2	2	0
August	37	3	2	2	0
September	211	22	8	6	2
October	256	15	12	10	2
November	220	19	11	9	2
Total	783	68	38	31	7

In the second column of the table the total number of positive agglutinations reported is indicated. The difference between these numbers and the total number of positive cases is explained largely by the repetition of examinations on the various cases. In September, however, five dry blood specimens were recorded as weakly positive, but the wet blood specimens from these patients proved to be nega-

tive. These had been reported without titration by the method which will be described. The specimens were kept, however, and later, in October, the titer was determined and they were found to fall into the class now reported as negative.

The positive cases are divided into two groups—confirmed positives and unconfirmed positives. In many of the cases, the agglutination of *Br. melitensis* has suggested the diagnosis of Malta fever. On this basis alone, however, the diagnosis is not established. Clinical evidence pointing to Malta fever and laboratory and clinical evidence ruling out the diseases with which it may be confused, combined with the laboratory evidence of the infection, are considered as sufficient to confirm the diagnosis. The clinical findings were personally determined in 21 cases. This was done during an epidemiological investigation. In 20 of these, the clinical findings justified the classification of the case as a confirmed positive. The one regarded as an unconfirmed positive had an advanced carcinoma, but with a persistent low-grade fever. The latter may have been due to *Br. melitensis*, but the agglutination titer was never higher than 1:160, and two cultures proved to be negative. Of the remaining 11 confirmed positive cases, 2 were studied in the University of Iowa Hospital and the organisms were repeatedly isolated. On seven, two or more agglutination tests were done and in addition a clinical report has been sent by the physician. A recent case with a high titer is included on the basis of laboratory evidence alone. One case, on which the agglutination test on the dried blood only was done, is considered as confirmed, since the clinical signs, symptoms, and course all indicated Malta fever. A wet blood specimen could not be obtained from the patient.

All positive serums have been tested with five organisms: *Br. melitensis*, var. *melitensis; Br. melitensis* var. *abortus; B. typhosus; B. paratyphosus* A; and *B. paratyphosus* B. Serums from 21 of the confirmed positive cases were tested with *B. tularense*. In all cases there was no agglutination of typhoid or paratyphoid organisms. In one case, *B. tularense* agglutinated in the 1:20 dilution and slightly in 1:40, but not higher. With *Br. melitensis* var. *melitensis* and var. *abortus*, there have been almost corresponding results in the titer obtained. With these organisms in 11 of the confirmed cases a titer of 1:1,280 was obtained; in four 1:640; in ten 1:320; in three 1:160, and in two 1:80. The reaction is called positive if there is a precipitation of 75 per cent or more of the antigen.

The unconfirmed positive cases are largely so classed because they have not been sufficiently studied. Serums from the one case in June and the two cases in September were examined both by us and at the Hygienic Laboratory, in Washington, D. C. Two gave a titer of 1:640 and one 1:80. No clinical history is known, however, but

these are probably Malta fever. The remaining four cases include two on which only positive dry blood specimens have been received, one on which the serum titer was 1:80, and the carcinoma case, previously mentioned.

ROUTINE MACROSCOPIC TEST

Many, if not most, of the public health laboratories are understaffed. Already there is a burden of work for each person. To be applicable, therefore, any additional routine tests must be simplified as far as is compatible with the obtaining of accurate results. It should be remembered, however, that very valuable contributions to our present knowledge of Malta fever may be made by standardized routine work. It is evident that to examine all specimens, a rapid method must be used; but a careful study should be made of all suspicious or positive specimens. To meet these requirements, the procedure described below has been found satisfactory.

In the preparation of antigen for routine work we have used an *abortus* strain supplied by the Hygienic Laboratory at Washington, and known as No. 456. We follow essentially the procedure described by Evans (7). From the stored supply a dilution is made to compare with the opacity standard of 1,000 p. p. m. For the preliminary examination of all specimens this antigen is diluted with equal parts of saline. This gives a suspension of 500 p. p. m. The serum is then diluted directly in the antigen. For each test, 5 tubes, 11 by 90 millimeters, are used. The serum dilutions are 1:5, 1:10, 1:20, 1:40, and 1:80. Three tubes only would be satisfactory, using the 1:20, 1:40, and 1:80 dilutions, but the five are used in order to collect data on the agglutination in low titers. A final volume of 0.4 c.c. is satisfactory and has the advantage of using less antigen. The dilutions are made as would ordinarily be done in saline. The method followed in this laboratory is to pipette the diluted antigen, using a 5 c. c. pipette graduated in 0.1 c. c. To the tubes in order 0.8, 0.4, 0.4, 0.4, and 0.2 c. c. are added. Using these amounts there is sufficient antigen in the 5 c. c. for two tests. Using a 1 c. c. pipette graduated in 0.01 c. c. to the first tube 0.2 c. c. of serum is added, giving the 1:5 dilution. From this tube 0.4 c. c. will be transferred to the second tube, giving the 1:10, and in a similar manner the 1:20 and the 1:40 dilutions are obtained. Of the 0.4 c. c. withdrawn from tube four, only 0.2 c. c. is added to tube five, giving the 1:80 dilution. The remaining 0.2 c. c. withdrawn is discarded. After the dilutions are thus set up, the racks are mechanically shaken for five minutes. They are then transferred to the 37° water bath and left for four hours. After this they are removed to the cold room and readings are made the following morning. In this preliminary test,

if there is agglutination in a titer of less than 1:40, a negative report is usually made, but with the suggestion that the examination be repeated if the fever continues. Only to hospitals or clinics in which a bacteriological study would be possible are agglutinations of 1:10 and 1:20 reported. It is indicated in the report that this titer has probably no diagnostic significance; but since positive cultures have been reported from such cases, it is suggested that cultures be taken. All serums which show complete agglutination in 1:40 and complete or partial in 1:80 are retitered before the report is made.

Before the final titration, serums are inactivated at 56° for 30 minutes. This should always be done if the 37° bath is used in the test. Three serums have been found by us which gave agglutinations up to 1:80 in the preliminary test, but which reduced to a titer so low as to be of no diagnostic importance after inactivation. Occasionally, therefore, misleading reports would be made if this step were omitted. In this titration, serums are first diluted in saline and the 1,000 p. p. m. antigen is added. As a matter of study, testing with both *abortus* and *melitensis* antigens is here recommended, though for diagnostic purposes only, either would be satisfactory. The shaking, incubation, and reading are done as described for the routine tests.

Of first importance in the interpretation of the macroscopic test is a knowledge of the lowest diagnostic titer. In order to determine this, a study of serums sent for Wassermanns has been started. At present, 287 tests have been done; but of all, 49 per cent gave complete agglutination in 1:5, 30 per cent in 1:10, 9.8 per cent in 1:20, 1.4 per cent as high as 1:40, and one specimen, or 0.3 per cent, had complete agglutination in 1:80 and partial in 1:160. Further work is being done to verify these results and to explain the phenomenon. The results suggest, however, that agglutination in a titer of less than 1:80 has little diagnostic value, and both the laboratory worker and the physician would be well advised to be slow in making a diagnosis of the infection because of agglutination in a low titer.

In the reporting of laboratory findings it must be borne in mind that some practitioners will accept any unqualified positive report as conclusive evidence of the presence of a disease. Until, therefore, more is known of the significance of agglutination in different titers, a letter should be sent with a positive report. This should urge that a diagnosis of Malta fever be made only if clinical and laboratory findings agree. The laboratory may assist in the differential diagnosis by reporting on typhoid, paratyphoid, and tularaemia; but the clinician must rule out an incipient tuberculosis, influenza, and, in some districts, malaria. If a titer of 1 : 80 only has been obtained, additional caution should be urged, though it may be pointed out that a diagnosis of the infection may safely be made if the clinical findings strongly support the laboratory suspicion. In the letter

giving a positive report, it is well to suggest that blood counts and cultures would be helpful, and in most instances it is appropriate to request that full clinical notes be kept. At this time also the epidemiological investigation may be mentioned; and for its success, the physician's interest and cooperation should be invited. Through such a personal letter with the report, a real cooperation may be enlisted.

MICROSCOPIC AGGLUTINATION TESTS

In the microscopic, as in the macroscopic test, two methods are employed. The first is simple and rapid and made on all dry specimens to separate the negative from the suspicious specimens. A titration on the latter is done before the final report is made. For all microscopic tests an antigen of 1,000 p. p. m. is used. In the first test a part of the dried blood is dissolved in a small drop of saline. Using a loop, the blood is mixed with the saline until the color of a drop in the loop compares with that of pale vaseline. This will give a final dilution of approximately 1 : 40. Care is necessary if errors are to be avoided, but an experienced worker can do this test with sufficient accuracy to separate negatives from the suspicious or positive specimens. The hanging drop is prepared in the usual manner and incubated for one hour. In this time there seems to be as much clumping as takes place in four hours, and tests are much easier to read after one hour than after four hours. Following a long incubation there is usually a precipitation of moisture around the hanging drop and this makes the reading difficult. In this preliminary examination any clumping is considered as suspicious, and on all of these a titration is done. The remainder are reported as showing no agglutination.

In the titration of dry bloods the dilution must be made on the basis of a color comparison. The method used is a modification of that described by Wadsworth (8). In this laboratory 0.02 c. c. of the defibrinated sheep blood is used, and, after drying, is diluted with 0.18 c. c. of saline. This gives the 1:10 color standard. This standard is then diluted to give the 1:20, 1:40, and 1:80 colors. In making this dilution, a Pasteur pipette is used. With this pipette held at a constant angle, two drops of saline are delivered into each of three depressions in the porcelain plate. The pipette is then blown dry. Two drops of the 1:10 standard are transferred to the second depression, giving the 1:20 dilution. In a similar way the 1:40 and 1:80 standards are obtained. A fresh specimen is also diluted, using the same procedure. This is necessary, since the old dry blood presents a much darker and browner appearance. With the two standards, however, a fairly accurate comparison of colors may be made. Following this procedure there will be equal volumes

in the 1:20, 1:40, and 1:80 dilutions, and a color comparison is, for this reason, easily made.

The dry blood to be titered is dissolved with saline. This should be added ten minutes or more before the titration is to be made. A volume estimated as sufficient to give a dilution of approximately 1:10 is used. Care should be taken not to add enough to give a dilution higher than this. Additional saline may be added in the porcelain diluting plate until the color compares with the standard. Dilutions are made in the same manner as that described for the standard. Dilutions up to 1:160 should always be made, but we have found it interesting to titer up to 1:1280. The result of the titration of positive serums and the positive dry bloods which have been obtained from the same patient may then be compared. This knowledge will be of value in interpreting the results of the dry blood examinations. In making the test, the hanging drops are prepared in the usual way. A loopful of the dissolved blood is mixed with a loopful of antigen. The lowest dilution set up will therefore be 1:20.

In reading, after the controls have been observed, the presence or absence of clumping in the test drops is noted. If this is present, the size of the clump is observed and recorded as small, medium, or large. The presence or absence of free organisms should also be noted. If there is any uncertainty, high power observations should be made. There are many possible errors in the interpretation of a microscopic agglutination test done on a small nonmotile organism. Great caution should therefore be used. At the present time we consider it unwise to make an unqualified positive report. The physicians are informed, by letter, of the significant findings, but we indicate that there has not been sufficient experience with the test to learn its reliability. We request that, in order to confirm the report, wet blood be sent for the macroscopic test. This is almost invariably done. If the agglutination tests on the dried blood are made, it is important that the laboratory have a standard which will allow a classification of the tests as negative, doubtful, or positive. This standard adopted at present may be changed after more experience. Through an examination of the dried smears made from the whole wet bloods received, the serum titers of which have been determined, we have fixed a standard satisfactory as a working basis. Tests which show small clumps in the lowest dilution with no agglutination in the higher are regarded as negative. This will be obtained when the serum gives complete or partial agglutination in a 1:20 dilution. Those showing medium or large clumps in the 1:20 and 1:40 dilutions, with small clumps and some free organisms in 1:80 or up to 1:160, are regarded as suspicious and should be reported; but if there are medium and large clumps in 1:40 and 1:80, with large, medium, or small clumps, but complete agglutination in 1:160, it may be expected that the case will prove to be Malta fever. At the

present time, however, as has been indicated, a final opinion should not be based on an examination of the dried blood only, but this standard may be used as a basis for further study and will prevent the giving of misleading information to the physicians.

DISCUSSION

The findings made at the Iowa State Hygienic Laboratories as a result of the routine examination for Malta fever of blood specimens sent for Widal tests have been reported. The significance of these examinations is better realized when compared with the results of typhoid examinations. During the three months, 46 positive Widals were reported from 41 cases, while the number of agglutinations for Malta fever was 56 from 31 cases. The figures indicate that, in Iowa at least, Malta fever presents a health problem comparable to that of typhoid.

The advisability of adopting the routine described in all State and municipal laboratories is emphasized by this report. Of the 38 positive cases, in only 10 did the physician consider Malta fever as a possibility and request the agglutination test. This condition continued even though a case was reported and discussed at the meeting of the State medical society in June, 1927, and the report later appeared in the Journal of the Iowa State Medical Society. The laboratory has also at different times, through brief laboratory notes which are inclosed with reports, called the attention of the physicians to the possibility of encountering Malta fever. Many physicians, therefore, have been looking for the disease. Even after this, in not one-fourth of detected cases had any examination for Malta fever been requested by the physician. The State and municipal laboratories should, therefore, make this examination as a routine. The advisability of testing the dried bloods may also be urged. In the three months in which this has been done, 30 positive cases have been found. Of these, 19 were first detected through the examination of the dried blood sent for a Widal test.

In Iowa, and the same is probably true of most States, many bloods are examined at hospital and private laboratories. For study we have requested that these be sent to the State Laboratory for Malta fever examination only. This has resulted up to the present in the finding of four cases. It seems advisable at the present time to have all examinations for this infection done at central laboratories. Cases may then be studied more fully and accurately.

The diagnosing of a greater proportion of the cases of Malta fever which actually occur may modify the present conception of its clinical course. In the past, only the unusually severe and prolonged cases have been studied. Those which were milder and shorter did not call forth the additional thought and action which might have led to the correct diagnosis. It may become clear,

therefore, that many mild and comparatively short illnesses are due to *Br. melitensis*.

Malta fever is probably a disease of the country, villages, and small towns. Most cases will, therefore, be seen by the general practitioners. Their laboratory in Iowa is the State laboratory, and a similar situation probably exists in most States. To obtain their interest in the infection, the most effective means will be to suggest and confirm the diagnosis of Malta fever on cases in which this disease was not clinically considered. This will be done only when bloods sent for Widal tests are routinely tested with *Br. melitensis*.

The distribution of the infection is as yet unknown. This information might soon be gathered by a united interest and effort taken by State and municipal laboratories. Negative findings will be as valuable as positive. A correlation of the distribution of Malta fever with that of contagious abortion will provide important information in the epidemiology of the disease. In addition, preventive measures will be taken only when its prevalence is known. This situation demands the diagnosis of the cases, and unless the laboratory takes the lead, this will rarely be made. The opportunity of contributing to the present knowledge of Malta fever, and of aiding in its control, is therefore apparent.

CONCLUSIONS

1. An examination for Malta fever should be done routinely on all blood specimens sent to State or municipal laboratories for Widal tests.

2. A rapid and preliminary test may be made to eliminate the negatives, but a careful study should be made on all doubtful and positive specimens.

3. Dried blood specimens as well as serums should be examined. The procedure for this test is described.

4. A diagnosis should be established only if clinical and laboratory findings agree.

5. Malta fever in Iowa presents a health hazard comparable to that of typhoid.

6. State and municipal laboratories have an unusual opportunity in contributing to the study of Malta fever.

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(5) Orr and Huddleson: Am. J. P. H. (December, 1927), vol. 17, pp. 1242–47.
(6) See: Medicine (December, 1924), vol. 6, pp. 213–218.
(7) Evans: Am. J. P. H. (April, 1927), vol. 17, pp. 399–403.
(8) Wadsworth: Standard Methods, p. 170.

SECOND INTERNATIONAL CONGRESS OF RADIOLOGY

To Be Held in Stockholm, Sweden, July 23–27, 1928

The attention of persons and institutions interested is invited to the Second International Congress of Radiology which will be held in Stockholm, Sweden, from July 23 to 27, 1928.

According to a memorandum furnished by the Minister of Sweden, through the Department of State, the proceedings will comprise Röntgen diagnosis, radiotherapy (including Röntgen, radium, and helio therapy), medical electrology, radio physics, and instruction in medical radiology. Summary addresses will be given on different branches of radiology and a series of papers will be presented on instruction and training in medical radiology, with particular reference to experiences gained in the different countries.

The question of establishing an international unit dosage for Röntgen rays, as well as the question of general principles for protective measures, will also be a subject of discussion during the proceedings.

The congress will be held in the House of Parliament.

Persons intending to participate in the congress may secure additional information and a membership card, for which a small charge is made, by addressing the Secretary General, Second International Congress of Radiology, Sophiahemmet, Stockholm, Sweden.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Recent Trend in Sewage Disposal Developed in Design for Fostoria, Ohio. J. F. Laboon. Proceedings of the Engineers Society of Western Pennsylvania, vol. 43, No. 3, April, 1927, pp. 149–178. (Abstract by Fred Almquist.)

Of the more important developments in the art of sewage disposal the following are mentioned: The detritus tank for the interception of grease and grit; the separate digestion of sludge; and the means for digestion of large quantities of sludge as in the activated sludge type of disposal. The second will be adopted for the proposed plant of Fostoria, Ohio.

After reviewing the various stages in the construction of sewage disposal facilities at Fostoria, the author comments on an acid sewage which occurred from time to time and which deleteriously affected all physical fixtures below the flow line. The acid sewage was caused by a particular industry, which later installed a lime neutralization plant. In 1926 the city was restrained from using Portage River as a receiving basin for the effluent from their disposal plant Consequently, additional disposal facilities had to be sought.

The new improvements consist of grit-handling apparatus, transformation of an Imhoff tank into a separate sludge digestion tank, thickeners, dosing tanks, trickling filters, humus tank, and some others less important. Digestion in the separate sludge tank will be hastened by heating in the winter. The heater will be arranged to use gas collected from the digestion tank. Lime will be added to obtain optimum hydrogen ion concentration of the sludge for the elimination of acid digestion. Trickling filter rate is 2,500 people per acre per foot of depth on a basis of an average depth of 7 feet.

Wet Sludge as Fertilizer. S. Duxbury. *Public Works*, vol. 58, No. 10, October, 1927, pp. 374–375. (Abstract by R. J. Faust.)

The fertilizer value of wet sludge, 95 per cent moisture, from the Bedford, England, sewage treatment plant is 87 per cent greater than similar sludge air dried, 28 per cent moisture, as determined by actual experiments. The elevation of the sludge outlet valves at the plant are above the surrounding land so that it is possible to discharge the wet sludge on the land by gravity. The advantages claimed by this method of sludge disposal are— (1) Sludge is never so valuable for fertilization as when fresh; (2) it can be more evenly distributed; (3) fresh sludge warms cold soils, makes them more porous, and the fermentations that take place during decay tend to make the soil more mellow; (4) the plant food is more available; (5) when spread evenly and thinly, there is no loss of its valuable constituents through early fermentation; (6) the crop is more even; (7) it improves the mechanical condition and drainage of the soil; (8) it is disposed of with advantage at a low cost.

Operating Results of the Essen Activated Sludge Plant. Karl Imhoff. (Translated from the German by Gordon M. Fair). *Engineering News-Record*, vol. 99, No. 20, November 17, 1927, pp. 790–791. (Abstract by C. H. Kibbey.)

The activated sludge plant at Essen-Rellinghausen has been in operation since December, 1925, serves 45,000 people, and receives a dry-weather flow approximating 130 gallons per capita per day. The wooden paddles (mechanical agitation device) used in conjunction with compressed air have continued to show their usefulness. With a three and one-half hour aeration period the air consumption is only 0.08 cu. ft. per gallon, and the entire power consumption is 7 h. p. per m. g.

The analytical results, which are comprehensively stated in a table, show a reduction in suspended solids of from 180 p. p. m. in raw sewage, and 120 p. p. m. in Imhoff tank effluent, to 6 p. p. m. in effluent from the activated sludge plant. Consumed oxygen is shown as 532 p. p. m. in raw sewage, 350 p. p. m. in Imhoff tank effluent and 30 p. p. m in effluent from the activated sludge plant. The hydrogen ion concentration remains relatively the same for raw sewage, Imhoff tank effluent and effluent from the activated sludge plant being expressed as pH 7.5 for both raw sewage and tank effluent and 7.2 for activated sludge plant.

Heating is accomplished by raising the temperature of water from the pressure supply mains, in a boiler heated by sludge gas, to 70° or 80° C., and then introducing it into the bottom of the digestion tank. This obviates the difficulties experienced where heating coils are passed through the sludge. The temperature in the sludge tank, which was 8° to 9° C. prior to heating, has since been maintained at 21° C., with a tenfold increase in gas production and consequent increased digestion tank efficiency. Only that gas generated in the digestion tank is used in this way. Gas from the Imhoff tanks is sold to the municipal gas works. Since heating has been introduced, the total gas production has been increased, the CO_2 content of the gas has increased somewhat, and the methane content remains over 73 per cent.

The construction cost, exlusive of preliminary clarification units, is now $90,000, with an operating cost of $12,500 per annum.

Sewage Disposal in the Lower Lea Valley, Essex. Anon. *Surveyor*, vol. 72, No. 1866, October 28, 1927, pp. 391–392. (Abstract by R. E. Thompson.)

A new outfall sewer was recently put into commission in Leyton for delivering the sewage of the district into the London County Council system. The work is the culmination of negotiations which have been proceeding since 1906. The arrangements were completed in conjunction with the Walthamstow Council. Venturi recording apparatus and electrically-controlled cutting-off gear have been provided, the latter diverting sewage into stand-by storage tanks when the

sewage in the London County Council sewer reaches a predetermined level and when rate of flow from Leyton exceeds a specified amount (50 gallons per day per head of population upon an agreed figure). The average length of time during which the sewage has been at the specified level for several years is about 14 hours per annum. When the level recedes, the sewage from the tanks, which have total capacity of over 2¼ million gallons, flows back into the county council sewer.

Conditions at Sewage Works of Milwaukee, Wisconsin. Robert Cramer. *Engineering News-Record*, vol. 99, No. 19, November 10, 1927, p. 751. (Abstract by D. E. Kepner.)

In a paper read before the Lake Michigan Sanitation Congress, abstracted in this article, the author states that the purification possibilities of the activated sludge process are being demonstrated on a large scale at the Milwaukee plant. An average of 70 m. g. d. was being treated at the time the paper was prepared, or about 75 per cent of the then dry-weather flow. By increasing the capacity of some of the sludge dewatering apparatus and correcting certain faulty designing, the capacity of this part of the process will be increased to permit operation of the entire plant at full dry-weather-flow rate.

Changes and additions being made to permit more efficient operation include the rebuilding of the drier settings so that the excess air necessary for drying is mixed with gases of combustion in the furnace, resulting in lower furnace temperatures and increasing the life of the fire brick. Troublesome odors from the drier discharges were being treated with chlorine gas, with good results.

Experiments with fine screenings showed that pressing was impracticable, but that a salable fertilizer could be produced from them by pressure cooking, and that an inert product resulted from their biological digestion.

Sink Hole Topography Study for Sewage Disposal. J. E. Lamar. *Engineering News-Record*, vol 99, No. 16, October 20, 1927, pp. 642–643. (Abstract by A. H. Wieters.)

A proposal by the city of Alton, Illinois, to dispose of sewage from a rapidly growing subdivision into a sink hole resulted in a study by the Illinois Geological Survey and the Illinois Department of Health. The question raised was whether the sewage thus disposed of would enter the Mississippi River directly above the Alton Water Works intake. The study disclosed that it would.

Fluorescein was introduced into the stream entering the sink hole and by the following morning green color persisted for two hundred feet in the Mississippi River below the mouth of the subterranean channel.

The article describes in detail the geology of the area.

Interstate Control of Stream Pollution. John E. Monger. *Nation's Health*, Vol. 9, No. 8, August 15, 1927, pp. 16–18 and 68. (Abstract by Paul S. Fox.)

The writer believes that the State health department is the logical organization to exercise control of stream pollution. Citation is made of the cooperation of the nine State health departments which are interested in the control of the Ohio River system. Brief descriptions of the methods employed by some of the industries affected to solve their own problems are given. "The possibilities of cooperative action among the States, and particularly the health departments of the States, are apparently unlimited; and with the development of a conscience by the States, the stream pollution problems as affecting one another may be solved without the intervention of Federal agencies."

Sanitary Construction and Arrangement of Milk Pasteurizing Plants. C. A. Holmquist. *American Journal of Public Health*, vol. 17, No. 11, November, 1927, pp. 1121–1124. (Abstract by H. D. Cashmore.)

The knowledge that Pasteurized milk is safe and keeps well has led to an enormous consumption of this ideal food and requires that much attention be given to the location, construction, and maintenance of Pasteurizing plants as well as efficiency of operation.

The selection of a site for the plant is usually based on economic considerations, but sanitary considerations can not be ignored. Nearness to transportation and center of distribution are important from an economic standpoint, but freedom from dust and traffic congestion are important also. Location as to barns and other fly-breeding places is discussed briefly in this article.

Under the heading of construction of building, the following points are discussed: (1) Equipment; (2) lavatories and toilets; (3) offices, boiler rooms, etc.; (4) light and ventilation; (5) floors, walls, and ceilings.

A complete but brief summary covering the important points of the article appears at the end.

Improvements in Lime-Soda Water Softening Methods at Columbus, Ohio. Chas. P. Hoover. Sixth Annual Report of Ohio Conference on Water Purification, 1926, pp. 63–71. (Abstract by R. E. Thompson.)

The theoretical limit for softening by lime-soda process is 2 g. per g., and this limit can not be reached in practice unless heat is employed or excess chemicals are used. This is believed to be due to the formation of complex basic carbonates. A chart is given showing theoretical and actual reduction in alkalinity and incrustants by addition of soda ash in increasing quantities to a magnesium water. Efficiency may be increased by split treatment, proper agitation, and by use of a coagulant. At Columbus it has been found that hardness can be reduced from 318 to less than 60 p. p. m. without the use of excess chemicals by adding 5 g. per g. of alum. Experiments are being conducted on zeolite softening. While it is cheaper to remove carbonate hardness with lime than by base exchange, the cost of removing noncarbonate hardness by the latter method is only one-half that of soda ash treatment. It is planned to replace sand in one of the filters with zeolite sand for experimental purposes. It is believed that hardness can be reduced to 160 p. p. m. with lime, and that to produce water of 80 p. p. m. it will be necessary further to treat only one-half of total in zeolite filters.

Comfort Stations are not Necessarily Nuisances as to Owners of Adjacent Property. Anon. *American City*, vol. 38, No. 1, January, 1928, p. 181–182.

Refusing to abate a municipal comfort station upon the plea that it per se constituted a nuisance against near-by property owners, the Washington Supreme Court said in the case of Zey *v.* Town of Long Beach (258 Pacific Reporter, 492):

"A comfort station is not a nuisance per se and may or may not be such in fact, depending upon the attendant facts and circumstances * * *. Before it can be held that the comfort station constituted a nuisance, it must be found that it interfered with the comfortable enjoyment of the appellants in their life and use of their property * * *. There is no direct evidence that the rental value of the rooms or cottages was impaired by the presence of the comfort station or that the value of the property was reduced. It is undoubtedly true that the presence of the comfort station directly to the west and immediately in front of the residence of the appellants is not a thing to be desired. It would offend against the esthetic sense, but this would not be sufficient to make it a nuisance."

Public Health Engineering in Australia. F. F. Longley. *American Journal of Public Health*, vol. 17, No. 3, March, 1927, pp. 228–232. (Abstract by H. D. Cashmore.)

Through the influence of the International Health Board some few years ago, sanitary engineering was given a foothold in Australia; and the interest shown by the Government and the views already taken on this work have made it possible firmly to establish sanitary engineering as a public health activity.

Until this time no engineers were included in the health organization, as sanitary engineering work under state health officers was considered unnecessary. The first step was to adopt a policy in regard to who should be the authority to enforce this work, State or Commonwealth, and State rights won out. The next step was the selling of public health engineering to the people, and a conference of all State medical officers was held to plan the future work. Out of this came *Health*, the vehicle by which the advertising was carried on.

One of the chief sanitary problems was the installation of sewerage systems in the larger towns. In places where they were not practicable, the disposal of night soil was studied. In this connection there was outlined a definite set of problems to be studied and solved.

Knowing that the International Health Board was there for only a limited time, an engineer of some experience was appointed to take charge of this work. He was sent to America and Europe to study the latest ideas on this work. Based upon the activity and interest shown by the people, a five-year program was presented at a second meeting of the health officers assembled to discuss public health.

Sanitary Problems in a Colliery District. W. A. Murphy. *Journal of State Medicine*, vol. 35, No. 9, September, 1927, pp. 545–549. (Abstract by L. M. Fisher.)

Colliery towns are usually built in narrow ravines where there is barely room for river, railroad, and highway. The stream is polluted with coal washings and surface wash from the villages. The water supply frequently obtained from surface sources is often contaminated.

Subsidence due to mining operations damages the houses so that many are made uninhabitable. The pneumonia rate among the workers is high. Pithead baths should be provided. Smoke-abatement measures should be instituted. The sanitary problems in general are peculiar to collieries.

DEATHS DURING WEEK ENDED FEBRUARY 18, 1928

Summary of information received by telegraph from industrial insurance companies for the week ended February 18, 1928, and corresponding week of 1927. (From the Weekly Health Index, February 23, 1928, issued by the Bureau of the Census, Department of Commerce)

	Week ended Feb. 18, 1928	Corresponding week, 1927
Policies in force	69, 956, 655	66, 767, 638
Number of death claims	12, 983	14, 209
Death claims per 1,000 policies in force, annual rate	9. 7	11. 1

Deaths from all causes in certain large cities of the United States during the week ended February 18, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927. (*From the Weekly Health Index, February 23, 1928, issued by the Bureau of the Census, Department of Commerce*)

City	Week ended Feb. 18, 1928		Annual death rate per 1,000 corresponding week 1927	Deaths under 1 year		Infant mortality rate, week ended Feb. 18, 1928 [2]
	Total deaths	Death rate [1]		Week ended Feb. 18, 1928	Corresponding week 1927	
Total (68 cities)	8,131	14.0	13.5	848	920	[3] 70
Akron	49			10	10	109
Albany [4]	43	18.7	16.1	0	3	0
Atlanta	66	13.6	16.3	6	11	
White	41		10.1	2	3	
Colored	25	(5)	31.0	4	8	
Baltimore [4]	280	17.6	16.9	36	42	114
White	208		14.2	22	26	88
Colored	72	(5)	32.9	14	16	219
Birmingham	67	15.8	15.3	11	9	94
White	24		13.0	1	4	14
Colored	43	(5)	19.1	10	5	225
Boston	248	16.2	15.9	35	35	97
Bridgeport	41			4	2	73
Buffalo	158	14.9	15.9	16	19	69
Cambridge	30	12.5	11.8	3	3	53
Camden	27	10.4	15.3	3	7	48
Canton	23	10.3	7.8	7	2	166
Chicago [4]	801	13.3	11.6	79	79	68
Cincinnati	149	18.8	19.6	18	19	109
Cleveland	201	10.4	10.3	19	21	52
Columbus	83	14.6	15.6	9	4	84
Dallas	67	16.1	14.8	8	5	
White	46		13.6	6	5	
Colored	21	(5)	22.8	2	0	
Dayton	58	16.4	12.7	4	5	66
Denver	101	17.9	17.1	12	6	
Des Moines	32	11.0	11.2	2	3	33
Detroit	285	10.8	12.7	41	71	63
Duluth	24	10.7	10.5	3	2	70
El Paso	44	19.5	13.8	8	5	
Erie	29			3	5	62
Fall River [4]	42	16.4	14.5	9	9	154
Flint	37	13.0	6.9	5	4	64
Fort Worth	42	13.1	11.8	5	4	
White	35		11.6	5	4	
Colored	7	(5)	13.3	0	0	
Grand Rapids	33	10.5	12.6	4	6	60
Houston	75			6	8	
White	58			6	7	
Colored	17	(5)		0	1	
Indianapolis	95	13.0	12.3	6	12	46
White	78		12.8	6	7	52
Colored	17	(5)	8.1	0	5	0
Jersey City	88	14.2	13.1	14	9	105
Kansas City, Kans	32	14.1	16.4	5	6	106
White	23		15.7	2	3	49
Colored	9	(5)	19.7	3	3	436
Kansas City, Mo	127	17.0	17.1	10	9	71
Knoxville	23	11.4	15.8	4	1	87
White	20		12.2	4	1	97
Colored	3	(5)	42.7	0	0	0
Los Angeles	334			27	28	77
Lowell	30	14.2	16.5	4	6	84
Lynn	29	14.4	11.4	2	3	50
Memphis	76	20.9	16.0	12	8	141
White	42		10.8	7	5	131
Colored	34	(5)	25.5	5	3	157
Milwaukee	104	10.0	10.2	12	15	54
Minneapolis	75	8.6	10.7	5	13	30
Nashville	38	21.9	20.8	7	7	110
White	29		20.0	2	4	43
Colored	29	(5)	22.8	5	3	300
New Bedford	32	14.0	13.5	2	5	43
New Haven	38	10.6	11.3	4	4	56
New Orleans	198	24.1	18.6	14	19	68
White	125		14.8	8	7	58
Colored	73	(5)	29.3	6	12	87

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended February 18, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927—Continued

City	Week ended Feb. 18, 1928		Annual death rate per 1,000 corresponding week 1927	Deaths under 1 year		Infant mortality rate, week ended Feb. 18, 1928
	Total deaths	Death rate		Week ended Feb. 18, 1928	Corresponding week 1927	
New York	1,652	14.4	13.2	191	152	77
Bronx Borough	198	10.9	10.1	18	11	54
Brooklyn Borough	569	12.9	12.8	87	66	87
Manhattan Borough	674	20.1	17.0	62	65	73
Queens Borough	167	10.2	8.5	20	9	81
Richmond Borough	44	15.3	15.3	4	1	72
Newark, N. J	108	11.9	13.0	18	19	93
Oakland	70	13.4	15.8	6	2	65
Oklahoma City	35			3	0	
Omaha	67	15.7	14.7	3	1	35
Paterson	39	14.1	14.1	6	8	104
Philadelphia	602	15.2	13.3	61	59	82
Pittsburgh	192	14.9	13.1	21	23	69
Portland, Oreg	70			2	6	21
Providence	69	12.6	13.0	5	11	44
Richmond	56	15.1	15.0	0	4	0
White	32		15.3	0	3	0
Colored	24	(3)	14.1	0	1	0
Rochester	86	13.7	14.0	7	7	57
St. Louis	219	13.5	13.0	15	18	50
St. Paul	75	15.5	12.9	6	3	57
Salt Lake City[4]	26	9.9	18.1	0	6	0
San Antonio	79	18.9	13.3	11	14	
San Diego	45	19.7	19.0	2	12	38
San Francisco	160	14.3	15.6	9	8	57
Schenectady	24	13.4	10.6	4	2	125
Seattle	70	9.6	9.0	3	1	31
Somerville	29	14.8	10.3	4	4	138
Spokane	31	14.9	18.2	1	2	26
Springfield, Mass	34	11.9	14.2	3	7	48
Syracuse	38	10.0	16.1	6	7	73
Tacoma	29	13.7	13.1	1	1	26
Toledo	72	12.0	12.5	2	11	19
Trenton	31	11.7	13.4	7	5	119
Washington, D. C	140	13.3	16.5	3	26	17
White	88		12.8	2	11	17
Colored	52	(3)	27.6	1	15	18
Waterbury	30			4	2	116
Wilmington, Del	25	10.2	14.4	2	2	53
Worcester	53	14.0	13.3	1	6	12
Yonkers	28	12.1	7.0	3	1	68
Youngstown	36	10.8	10.8	3	7	40

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 68 cities.
[4] Deaths for week ended Friday, Feb. 17, 1928.
[5] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended February 26, 1927, and February 25, 1928

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended February 26, 1927, and February 25, 1928

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928
New England States:								
Maine	2	1	10	6	177	46	1	2
New Hampshire								
Vermont	1				55	4	0	0
Massachusetts	100	127	18	11	239	1,691	1	1
Rhode Island	11	9	4			63	1	0
Connecticut	27	26	18	3	138	358	0	2
Middle Atlantic States:								
New York	367	391	[1] 135	[1] 55	847	1,650	3	9
New Jersey	97	152	34	16	55	790	1	3
Pennsylvania	205	194			872	1,047	2	2
East North Central States:								
Ohio		181		9		538		2
Indiana	28	26	46	25	200	151	1	0
Illinois	118	170	29	40	2,306	156	3	7
Michigan	104	60			281	532	0	1
Wisconsin	30	33	80	41	601	80	6	1
West North Central States:								
Minnesota	31	26	3	4	274	2	2	4
Iowa	32	13			747	65	0	0
Missouri	42	50	26	40	229	159	2	0
North Dakota	1	3		2	149		2	2
South Dakota	1		14		269	28	0	0
Nebraska	4	9	14		181	7	0	5
Kansas	21	22	11	51	730	72	2	0
South Atlantic States:								
Delaware	1				4	4	0	0
Maryland [2]	66	48	226	61	37	750	0	0
District of Columbia	25		7		7		0	
Virginia								
West Virginia	26	16	56	59	198	119	5	2
North Carolina	23	50			512	3,877	1	0
South Carolina	23	15	157	1,058	19	1,270	0	0
Georgia	23	4	208	189	253	325	0	1
Florida	30	9	17	5	78	16	2	1

[1] New York City only.

[2] Week ended Friday.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended February 26, 1927, and February 25, 1928—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928
East South Central States:								
Kentucky		5				243		0
Tennessee	17	12	84	103	240	474	3	4
Alabama	39	42	76	244	235	365	0	2
Mississippi	18	11						0
West South Central States:								
Arkansas	1	10	149	363	29	673	0	0
Louisiana	22	22	15	129	114	274	1	1
Oklahoma [1]	20	30	179	420	123	239	1	2
Texas	37	19	23	30	26	133	0	1
Mountain States:								
Montana	1	3	1		71	2	8	3
Idaho	1	1			66		0	6
Wyoming	1	3		2	163		0	4
Colorado	6	12	1	12	185	44	3	9
New Mexico	1	1	2		41	143	0	0
Arizona	2	6	1	4	9	7	0	1
Utah [2]	6	4	4		280	3	1	4
Nevada								
Pacific States:								
Washington	18	12	3		177	279	4	2
Oregon	16	10	478	22	77	72	3	1
California	132	124	79	51	3,186	151	2	4

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928
New England States:								
Maine	0	0	20	23	0	0	5	1
New Hampshire								
Vermont	0	0	5	20	0	0	0	1
Massachusetts	1	2	588	326	0	0	7	4
Rhode Island	0	0	17	33	0	0	0	1
Connecticut	0	0	107	89	0	2	0	4
Middle Atlantic States:								
New York	0	4	1,081	808	6	10	13	16
New Jersey	1	0	381	294	0	0	7	2
Pennsylvania	0	1	660	568	0	0	16	9
East North Central States:								
Ohio		2		309		31		6
Indiana	0	0	208	150	92	114	4	0
Illinois	2	1	389	331	21	53	10	3
Michigan	0	1	362	228	51	37	8	10
Wisconsin	2	1	288	185	14	21	2	4
West North Central States:								
Minnesota	0	1	264	148	5	0	6	1
Iowa	0	1	71	82	24	77	0	1
Missouri	1	0	142	94	15	53	8	6
North Dakota	0	0	128	59	0	4	1	2
South Dakota	0	1	76	46	6	3	4	0
Nebraska	0	0	61	109	16	17	2	2
Kansas	2	0	187	319	33	105	3	3
South Atlantic States:								
Delaware	0	0	27	10	0	0	1	1
Maryland [2]	0	0	77	91	0	0	3	5
District of Columbia	0		17		0		1	
Virginia								
West Virginia	0	0	69	56	32	54	17	14
North Carolina	0	0	27	34	85	113	3	2
South Carolina	6	1	10	14	24	4	15	10
Georgia	2	0	16	21	154	6	10	13
Florida	0	2	20	5	77	4	9	9

[1] Week ended Friday.

[2] Exclusive of Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended February 26, 1927, and February 25, 1928—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928	Week ended Feb. 26, 1927	Week ended Feb. 25, 1928
East South Central States:								
Kentucky		0		31		30		2
Tennessee	0	0	39	48	15	34	2	7
Alabama	0	3	19	7	50	7	15	25
Mississippi	0	1	9	22	7	4	7	6
West South Central States:								
Arkansas	0	0	12	41	14	7	10	10
Louisiana	0	1	23	10	6	22	9	4
Oklahoma [3]	0	4	36	61	53	190	13	18
Texas	0	0	28	51	29	12	2	1
Mountain States:								
Montana	0	0	79	15	5	12	0	0
Idaho	1	0	20	9	1	2	0	0
Wyoming	0	0	39	37	1	3	0	1
Colorado	0	0	162	117	5	12	0	0
New Mexico	0	2	28	13	8	2	2	0
Arizona	0	0	17	5	0	26	0	0
Utah [2]	0	0	14	9	0	23	2	0
Nevada								
Pacific States:								
Washington	0	1	91	56	45	82	5	2
Oregon	0	1	34	31	21	30	1	2
California	1	6	244	229	30	32	1	7

[2] Week ended Friday. [3] Exclusive of Tulsa.

Report for Week Ended February 11, 1928

IDAHO

	Cases		Cases
Scarlet fever	3	Smallpox	2

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
January, 1928										
California	26	581	151		367	2	30	845	109	35
Georgia	1	56	698	79	513	9	1	70	32	30
Iowa	12	85			284		6	368	359	11
Louisiana	4	104	214	31	406	8	1	51	68	33
Maryland	2	131	211		1,358		4	285	2	27
Massachusetts	11	485	58		5,518	1	18	1,508	3	28
Michigan	6	375	30	1	1,550		8	1,125	169	22
Minnesota	13	153	5		28		0	707	11	18
New Hampshire	0	1	65				0	83	0	0
New Jersey	11	761	71	1	1,051		3	987	4	27
New York	23	1,835		3	4,607		28	2,857	44	92
West Virginia	3	75	107		345		9	243	88	26
Wisconsin	15	149	334		276		3	772	130	8

January, 1928

	Cases
Anthrax:	
Massachusetts	1
New Jersey	1
Botulism:	
California	1
Chicken pox:	
California	1,906
Georgia	115
Iowa	224
Louisiana	47
Maryland	712
Massachusetts	1,320
Michigan	770
Minnesota	412
New Jersey	1,006
New York	2,507
West Virginia	241
Wisconsin	1,175
Dysentery:	
California (amebic)	2
California (bacillary)	10
Georgia	7
Louisiana	1
Maryland	4
New York	3
German measles:	
California	1,018
Iowa	23
Maryland	10
Massachusetts	104
New Jersey	129
New York	223
Wisconsin	34
Hookworm disease:	
Louisiana	8
Impetigo contagiosa:	
Iowa	2
Maryland	1
Lead poisoning:	
Massachusetts	5
New Jersey	2
Leprosy:	
California	1
Louisiana	1
Lethargic encephalitis:	
California	6
Louisiana	2
Maryland	2
Massachusetts	2
Michigan	2
Minnesota	2
New York	22
Wisconsin	3
Malta fever:	
Minnesota	1
Mumps:	
California	623
Georgia	85
Iowa	168
Louisiana	31
Maryland	118
Massachusetts	1,311
Michigan	1,092
New York	2,286
Wisconsin	828
Ophthalmia neonatorum:	
California	1
Maryland	3
Massachusetts	162
New Jersey	2
New York	3
Wisconsin	1
Paratyphoid fever:	
California	1
New Jersey	2
New York	4
Puerperal septicemia:	
New York	2
Rabies in animals:	
California	66
Maryland	1
New York	13
Rabies in man:	
Georgia	1
Scabies:	
Maryland	4
Septic sore throat:	
Georgia	12
Maryland	14
Massachusetts	91
Michigan	34
New York	20
Tetanus:	
California	1
Louisiana	2
Massachusetts	3
New York	3
Trachoma:	
California	16
Louisiana	1
Massachusetts	3
Minnesota	5
New Jersey	1
New York	4
Wisconsin	1
Trichinosis:	
California	3
Massachusetts	9
New Jersey	1
Tularaemia:	
Louisiana	1
Maryland	3
Typhus fever:	
Maryland	1
Vincents angina:	
Maryland	13
New York	84
Whooping cough:	
California	516
Georgia	31
Iowa	42
Louisiana	24
Maryland	133
Massachusetts	1,271
Michigan	696
Minnesota	55
New Jersey	723
New York	2,125
West Virginia	141
Wisconsin	293

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the month of January, 1928, by departments of health of certain States to other State health departments

	Anthrax	Diphtheria	Measles	Scarlet fever	Small pox	Typhoid fever	Tuberculosis
Illinois		2		1	9	1	
Minnesota						1	20
New York	1		2	3		1	
Washington						1	

PLAGUE-PREVENTION WORK IN THE UNITED STATES

Seattle, Wash.—The reports of rat-trapping operations of the United States Quarantine Station at Seattle for the months of December, 1927, and January, 1928, show a total of 2,199 rodents taken and 1,055 examined. None were reported plague-infected.

Los Angeles, Calif.—The rodent division of the Los Angeles Board of Health reports 7,888 rodents collected, and 4,822 examined during the nine weeks from December 4, 1927 to February 4, 1928. None were found plague-infected.

San Francisco Calif.—The weekly reports of plague-suppressive measures in California during the six weeks November 27, 1927, to January 7, 1928, show a total of 4,190 rodents received and 3,470 examined. No plague infection was reported during this period. The last case of human plague occurred in July, 1927, in Contra Costa County.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 100 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 31,100,000. The estimated population of the 94 cities reporting deaths is more than 30,400,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended February 11, 1928, and February 12, 1927

	1928	1927	Estimated expectancy
Cases reported			
Diphtheria:			
41 States	2,021	1,863	
100 cities	999	1,049	1,025
Measles:			
40 States	15,002	12,047	
100 cities	4,367	3,880	
Poliomyelitis:			
41 States	40	12	
Scarlet fever:			
41 States	4,989	5,964	
100 cities	1,768	2,299	1,461
Smallpox:			
41 States	1,225	887	
100 cities	129	156	126
Typhoid fever:			
41 States	196	240	
100 cities	44	42	36
Deaths reported			
Influenza and pneumonia:			
94 cities	1,073	960	
Smallpox:			
94 cities	0	0	

City reports for week ended February 11, 1928

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1919 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population, July 1, 1926, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	76,400	2	1	2	0	0	0	11	0
New Hampshire:									
Concord	[1] 22,546	0	0	0	0	0	0	0	2
Manchester	84,000	0	3	0	0	0	3	0	1
Vermont:									
Barre	[1] 10,008	2	0	0	0	0	0	0	0
Burlington	[1] 24,089	3	1	0	0	0	0	0	0
Massachusetts:									
Boston	787,000	68	51	21	3	1	517	3	17
Fall River	131,000	11	5	6	1	1	0	0	1
Springfield	145,000	6	2	4	1	0	4	37	3
Worcester	193,000	24	5	3	0	0	15	74	4
Rhode Island:									
Pawtucket	71,000	5	1	0	0	0	5	23	5
Providence	275,000	4	10	9	0	0	5	4	13
Connecticut:									
Bridgeport	(2)	7	9	8	0	1	3	0	4
Hartford	164,000	6	8	5	0	0	2	2	2
New Haven	182,000	18	2	1	0	0	151	31	14
MIDDLE ATLANTIC									
New York:									
Buffalo	544,000		15						
New York	5,924,000	203	213	319	40	14	284	37	264
Rochester	321,000	14	11	12	1	1	10	11	5
Syracuse	185,000	28	4	2		0	64	17	1
New Jersey:									
Camden	131,000	6	5	10	2	2	1	1	5
Newark	459,000	38	14	27	11	2	219	25	19
Trenton	134,000	4	4	4	0	1	16	1	4
Pennsylvania:									
Philadelphia	2,008,000	63	79	64		5	82	102	59
Pittsburgh	637,000	31	20	17		3	233	89	30
Reading	114,000	23	3	3		0	0	2	3
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	411,000	14	10	5	0	1	279	7	12
Cleveland	960,000	62	34	74	1	0	21	203	11
Columbus	285,000	10	4	1	1	0	9	4	3
Toledo	295,000	46	8	4	2	2	202	16	11
Indiana:									
Fort Wayne	99,900	1	3	2	0	0	0	0	6
Indianapolis	367,000	34	9	10	0	0	22	59	15
South Bend	81,700	0	1	0	0	0	1	0	3
Terre Haute	71,900	2	1	0	0	0	0	0	0
Illinois:									
Chicago	3,048,000	123	90	108	22	9	23	41	68
Springfield	64,700	18	1	0	0	0	0	15	1

[1] Estimated, July 1, 1925.

[2] No estimate made.

City reports for week ended February 11, 1928—Continued

Division, State, and city	Population, July 1, 1926, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued									
Michigan:									
Detroit	1,290,000	51	64	37	4	2	299	48	31
Flint	136,000	22	6	1	0	0	3	120	5
Grand Rapids	156,000	0	3	0	0	1	15	11	2
Wisconsin:									
Kenosha	52,700	24	2	1	0	0	1	8	2
Madison	47,600	7	1	0	0	0	3	0	0
Milwaukee	517,000	70	19	26	2	2	0	27	11
Racine	69,400	10	2	2	0	0	0	0	3
Superior	[1] 39,671	0	1	0	0	0	0	0	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth	113,000	1	1	4	0	0	1	4	3
Minneapolis	434,000	65	18	6	0	1	1	6	9
St. Paul	248,000	21	15	2	0	1	0	32	10
Iowa:									
Davenport	[1] 52,469	3	2	0	0	-------	0	0	-------
Des Moines	146,000	0	3	0	0	-------	0	0	-------
Sioux City	78,000	5	2	0	0	-------	23	30	-------
Waterloo	36,900	1	0	0	0	-------	0	0	-------
Missouri:									
Kansas City	375,000	24	8	1	0	0	8	136	12
St. Joseph	78,400	1	2	1	0	0	0	4	5
St. Louis	830,000	27	49	33	3	0	75	17	-------
North Dakota:									
Fargo	[1] 26,403	11	1	0	0	0	0	2	0
Grand Forks	[1] 14,811	0	0	1	0	-------	1	0	-------
South Dakota:									
Aberdeen	[1] 15,036	3	0	0	0	-------	1	0	-------
Sioux Falls	[1] 30,127	0	1	0	0	-------	0	0	-------
Nebraska:									
Omaha	216,000	10	4	3	0	0	2	2	8
Kansas:									
Topeka	56,500	50	2	1	0	0	1	2	1
Wichita	92,500	0	4	0	0	0	0	1	4
SOUTH ATLANTIC									
Delaware:									
Wilmington	124,000	7	2	2	0	0	0	0	0
Maryland:									
Baltimore	808,000	107	34	19	22	5	448	15	45
Cumberland	[1] 33,741	2	1	0	0	0	0	0	1
Frederick	[1] 12,035	0	0	1	1	0	0	0	2
District of Columbia:									
Washington	528,000	26	21	31	1	1	36	0	21
Virginia:									
Lynchburg	30,500	4	1	2	0	0	9	0	2
Norfolk	174,000	10	2	1	0	0	14	2	7
Richmond	189,000	2	4	0	0	1	81	0	12
Roanoke	61,900	5	1	0	0	1	7	0	3
West Virginia:									
Charleston	50,700	0	1	1	0	0	0	0	1
Wheeling	[1] 56,208	2	1	0	0	0	1	0	2
North Carolina:									
Raleigh	[1] 30,371	9	0	0	0	0	19	0	1
Wilmington	37,700	2	0	0	0	0	38	1	1
Winston-Salem	71,800	1	1	1	0	0	237	8	5
South Carolina:									
Charleston	74,100	3	0	1	57	1	9	0	3
Columbia	41,800	9	0	1	0	1	84	22	6
Greenville	[1] 27,311	0	0	0	0	1	40	4	1
Georgia:									
Atlanta	[2]	9	3	1	49	5	0	6	10
Brunswick	[1] 16,809	0	0	0	0	0	46	6	1
Savannah	94,900	0	1	1	9	0	47	0	4
Florida:									
Miami	[1] 69,754	12	2	3	0	0	0	4	0
St. Petersburg	[1] 26,847	-------	0	-------	-------	0	-------	-------	0
Tampa	102,000	19	1	2	0	1	1	1	0

[1] Estimated July 1, 1925.

[2] No estimate made.

City reports for week ended February 11, 1928—Continued

Division, State, and city	Population, July 1, 1926, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,500	4	1	0	0	0	17	0	4
Louisville	311,000	4	6	2	4	1	40	7	16
Tennessee:									
Memphis	177,000	23	4	3	0	4	139	19	8
Nashville	137,000	4	1	3	0	0	5	9	6
Alabama:									
Birmingham	211,000	15	3	2	9	0	25	4	11
Mobile	66,800	0	0	0	2	3	0	0	0
Montgomery	47,000	5	1	1	3	----	1	0	----
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	[1] 31,643	2	1	1	0	----	1	0	----
Little Rock	75,900	2	1	0	0	0	156	0	0
Louisiana:									
New Orleans	419,000	5	13	10	12	9	0	0	16
Shreveport	59,500	8	1	0	0	0	77	0	5
Oklahoma:									
Oklahoma City	(2)	1	1	3	12	0	12	0	2
Tulsa	133,000	32	1	3	0	----	0	32	----
Texas:									
Dallas	203,000	----	6	4	0	0	3	----	4
Fort Worth	139,000	36	2	8	0	0	4	4	7
Galveston	49,100	1	1	2	0	0	0	0	2
Houston	[1] 164,954	5	4	12	0	0	11	3	8
San Antonio	205,000	4	2	3	0	5	78	0	14
MOUNTAIN									
Montana:									
Billings	[1] 17,971	0	0	0	0	0	0	0	0
Great Falls	[1] 29,883	4	1	0	0	0	1	0	1
Helena	[1] 12,037	1	0	1	0	0	0	0	2
Missoula	[1] 12,668	0	0	0	0	0	0	0	1
Idaho:									
Boise	[1] 23,042	1	1	0	0	0	0	2	0
Colorado:									
Denver	285,000	36	13	3	----	3	17	95	10
Pueblo	43,900	13	2	1	0	0	2	0	1
New Mexico:									
Albuquerque	[1] 21,000	4	0	1	0	0	28	2	0
Utah:									
Salt Lake City	133,000	30	3	0	0	3	1	0	2
Nevada:									
Reno	[1] 12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(2)	32	7	4	0	----	188	21	----
Spokane	100,000	12	4	1	0	----	0	0	----
Tacoma	106,000	13	2	0	0	0	23	14	4
Oregon:									
Portland	[1] 282,383	35	9	7	0	0	13	4	11
California:									
Los Angeles	(2)	70	44	37	27	3	28	23	43
Sacramento	75,400	19	3	2	0	0	18	0	4
San Francisco	567,000	126	23	8	5	3	24	49	3

[1] Estimated, July 1, 1925.

[2] No estimate made.

City reports for week ended February 11, 1928—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	4	1	0	0	0	1	1	0	0	13	27
New Hampshire:											
Concord	0	0	0	0	0	0	0	0	0	0	10
Manchester	3	4	0	0	0	0	0	0	0	0	15
Vermont:											
Barre	0	1	0	0	0	0	0	0	0	0	3
Burlington	1	0	0	0	0	1	0	0	0	0	9
Massachusetts:											
Boston	79	89	0	0	0	20	1	2	0	85	242
Fall River	3	18	0	0	0	2	1	0	0	1	23
Springfield	8	14	0	0	0	1	0	0	0	12	38
Worcester	10	6	0	0	0	2	0	0	0	23	51
Rhode Island:											
Pawtucket	1	3	0	0	0	0	0	0	0	0	24
Providence	9	37	0	0	0	5	0	1	0	0	75
Connecticut:											
Bridgeport	13	6	0	0	0	4	0	0	0	5	42
Hartford	6	8	0	0	0	0	0	1	0	15	33
New Haven	11	5	0	0	0	3	0	0	0	29	63
MIDDLE ATLANTIC											
New York:											
Buffalo	25		1				1				
New York	285	387	0	0	0	119	7	6	0	184	1,658
Rochester	13	10	0	0	0	5	0	0	0	7	79
Syracuse	15	22	0	0	0	2	0	0	0	46	50
New Jersey:											
Camden	7	0	0	0	0	3	0	0	0	4	44
Newark	27	38	0	0	0	8	0	0	0	70	108
Trenton	6	8	0	0	0	1	0	1	0	9	38
Pennsylvania:											
Philadelphia	100	111	0	0	0	30	2	4	0	93	534
Pittsburgh	42	38	0	1	0	11	0	1	0	16	210
Reading	2	23	0	0	0	3	0	0	0	0	25
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	19	15	1	0	0	9	1	0	0	1	144
Cleveland	47	51	1	0	0	13	0	1	0	85	173
Columbus	11	10	1	0	0	3	0	0	0	2	70
Toledo	14	11	1	0	0	3	0	0	0	7	81
Indiana:											
Fort Wayne	6	1	1	0	0	1	0	0	0	0	31
Indianapolis	10	16	12	6	0	1	0	2	0	7	108
South Bend	3	1	0	0	0	0	0	0	0	6	6
Terre Haute	4	1	1	3	0	1	0	0	0	1	12
Illinois:											
Chicago	147	124	2	7	0	44	3	4	1	157	700
Springfield	2	19	0	0	0	0	0	1	0	0	22
Michigan:											
Detroit	100	137	3	1	0	17	1	0	0	101	299
Flint	9	24	1	1	0	0	0	0	0	8	22
Grand Rapids	12	4	1	0	0	0	0	0	0	7	44
Wisconsin:											
Kenosha	1	3	0	1	0	1	0	0	0	7	9
Madison	4	1	0	0	0	0	0	1	0	0	
Milwaukee	29	41	2	2	0	9	0	1	0	13	132
Racine	6	23	0	0	0	2	0	0	0	8	12
Superior	4	4	2	0	0	0	0	0	0	0	5

City reports for week ended February 11, 1928—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST NORTH CENTRAL											
Minnesota:											
Duluth	8	14	1	0	0	0	0	0	0	6	13
Minneapolis	61	25	5	0	0	8	0	0	0	1	98
St. Paul	36	11	5	0	0	6	0	2	0	1	58
Iowa:											
Davenport	1	5	2	1	----	----	0	0	----	0	----
Des Moines	6	14	1	21	----	----	0	0	----	0	----
Sioux City	2	2	1	0	----	----	0	0	----	4	----
Waterloo	2	10	0	3	----	----	0	1	----	1	----
Missouri:											
Kansas City	13	27	3	4	0	9	1	0	0	9	109
St. Joseph	3	3	0	9	0	2	0	0	0	1	31
St. Louis	46	43	3	2	0	14	1	0	0	31	226
North Dakota:											
Fargo	2	0	0	0	0	0	0	0	1	2	5
Grand Forks	1	2	1	0	----	----	0	0	----	0	----
South Dakota:											
Aberdeen	1	2	0	0	----	----	0	0	----	0	----
Sioux Falls	2	3	0	0	----	----	0	0	----	0	8
Nebraska:											
Omaha	6	8	11	5	0	1	1	0	0	0	60
Kansas:											
Topeka	1	2	1	3	0	0	0	0	0	36	11
Wichita	5	4	1	30	0	0	0	0	0	1	27
SOUTH ATLANTIC											
Delaware:											
Wilmington	5	1	0	0	0	0	0	1	0	0	----
Maryland:											
Baltimore	47	35	0	0	0	15	2	1	0	23	230
Cumberland	1	2	0	0	0	1	0	0	0	0	18
Frederick	2	0	0	0	0	0	0	0	0	0	5
District of Columbia:											
Washington	27	42	2	0	0	9	1	0	0	11	143
Virginia:											
Lynchburg	0	2	0	0	0	0	0	0	0	4	10
Norfolk	1	15	0	0	0	3	0	0	0	2	----
Richmond	3	9	0	0	0	3	1	0	0	0	61
Roanoke	1	4	1	0	0	2	0	0	0	0	18
West Virginia:											
Charleston	1	4	0	3	0	2	0	2	1	0	15
Wheeling	3	1	0	0	0	0	1	0	0	0	17
North Carolina:											
Raleigh	1	0	0	0	0	1	0	0	0	0	8
Wilmington	0	0	0	1	0	0	0	0	0	2	10
Winston-Salem	1	4	4	0	0	0	0	0	0	0	24
South Carolina:											
Charleston	1	0	1	0	0	2	0	0	0	0	30
Columbia	0	0	1	0	0	0	0	0	0	3	19
Greenville	0	0	1	0	0	0	0	0	0	0	6
Georgia:											
Atlanta	4	9	7	3	0	9	0	0	0	0	83
Brunswick	0	0	0	0	0	1	0	0	0	0	5
Savannah	0	0	0	5	0	3	0	0	0	0	25
Florida:											
Miami	1	0	----	0	0	2	1	0	0	0	21
St. Petersburg	0	---	0	----	0	1	0	----	0	----	9
Tampa	0	4	0	0	0	0	1	1	0	0	14
EAST SOUTH CENTRAL											
Kentucky:											
Covington	1	1	0	2	0	0	0	0	0	0	26
Louisville	6	16	1	0	0	0	1	0	0	0	67
Tennessee:											
Memphis	5	6	2	0	0	10	1	0	0	2	85
Nashville	4	1	0	0	0	3	0	1	0	0	45
Alabama:											
Birmingham	2	0	5	1	0	5	0	0	1	8	74
Mobile	0	3	1	0	0	1	0	0	1	0	24
Montgomery	0	0	0	0	----	----	0	0	----	0	----

City reports for week ended February 11, 1928—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	0	0	0	----	----	0	1	----	1	----
Little Rock	2	2	0	0	0	0	0	1	0	0	----
Louisiana:											
New Orleans	7	7	1	2	0	14	2	7	0	2	143
Shreveport	1	3	1	0	0	1	1	0	0	2	24
Oklahoma:											
Oklahoma City	2	3	3	13	0	0	0	0	0	0	33
Tulsa	1	6	1	7	----	----	0	0	----	3	----
Texas:											
Dallas	3	3	2	0	0	1	1	0	0	----	43
Fort Worth	0	8	1	1	0	0	1	0	0	0	26
Galveston	0	1	0	0	0	0	0	1	0	0	13
Houston	2	6	3	2	0	4	0	0	0	0	60
San Antonio	0	3	0	0	0	9	1	0	0	1	62
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	5	5
Great Falls	2	1	1	0	0	0	0	0	0	0	18
Helena	0	6	0	0	0	0	0	0	0	0	11
Missoula	1	1	1	1	0	0	0	0	0	0	9
Idaho:											
Boise	2	0	1	0	0	0	0	0	0	0	4
Colorado:											
Denver	14	18	2	1	0	6	0	0	0	5	89
Pueblo	2	34	1	2	0	0	0	0	0	4	11
New Mexico:											
Albuquerque	2	1	0	0	0	4	0	0	0	0	9
Utah:											
Salt Lake City	3	1	2	1	0	1	0	0	0	10	37
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	4
PACIFIC											
Washington:											
Seattle	11	3	4	3	----	----	0	0	----	9	----
Spokane	6	6	6	21	----	----	0	0	----	0	----
Tacoma	3	2	4	0	0	3	0	0	0	0	19
Oregon:											
Portland	7	6	8	22	0	3	0	0	1	0	84
California:											
Los Angeles	33	19	7	0	0	28	2	0	3	13	289
Sacramento	2	0	1	2	0	1	0	0	0	5	28
San Francisco	15	45	4	1	0	0	1	0	0	8	160

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	0	2	1	2	0	0	0	1	0
Worcester	1	0	2	1	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York	9	7	6	1	0	0	1	1	2
New Jersey:									
Trenton	0	0	0	1	0	0	0	0	0
Pennsylvania:									
Philadelphia	0	0	0	0	0	0	0	0	1
Pittsburgh	1	1	2	1	0	0	0	0	1

City reports for week ended February 11, 1928—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	1	1	0	0	0	0	0	1	1
Cleveland	0	0	0	0	0	0	0	1	0
Toledo	1	0	0	0	0	0	0	0	0
Illinois:									
Chicago	7	7	2	1	0	0	1	0	0
Michigan:									
Detroit	0	1	0	0	0	0		0	0
Wisconsin:									
Milwaukee	2	2	1	1	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	1	0	0	0	0	0	0	0	0
Missouri:									
Kansas City	1	0	0	0	0	0	0	0	0
St. Louis	2	0	0	0	0	0	0	0	0
North Dakota:									
Fargo	0	0	1	0	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	1	0	3	0	0	0	0	0	0
South Carolina:									
Columbia	0	0	0	0	0	1	0	0	0
Georgia:									
Savannah [1]	0	0	0	0	1	1	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	1	1	0	0	0	0	0	0	0
Nashville	0	0	1	0	1	0	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	0	0	1	1	3	0	0	0	0
Oklahoma:									
Oklahoma City	1	0	0	0	0	0	0	0	0
MOUNTAIN									
Montana:									
Missoula	1	1	0	0	0	0	0	0	0
Colorado:									
Denver	4	2	0	0	0	0	0	0	0
New Mexico:									
Albuquerque	0	0	1	1	0	0	0	0	0
Nevada:									
Reno	2	1	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	1	----	0	----	0	----	0	0	----
California:									
Los Angeles	3	3	0	0	0	0	1	1	1
Sacramento	2	0	0	0	0	0	0	0	0
San Francisco	2	0	0	0	0	0	0	1	0

[1] Typhus fever: 1 case at Savannah, Ga.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended February 11, 1928, compared with those for a like period ended February 12, 1927. The population figures used in computing the rates are approximate estimates as of

July 1, 1927 and 1928, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 31,050,000 in 1927 and 31,657,000 in 1928. The 95 cities reporting deaths had nearly 30,370,000 estimated population in 1927 and nearly 30,961,000 in 1928. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, January 8 to February 11, 1928—Annual rates per 100,000 population, compared with rates for the corresponding period of 1927 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Jan. 15, 1927	Jan. 14, 1928	Jan. 22, 1927	Jan. 21, 1928	Jan. 29, 1927	Jan. 28, 1928	Feb. 5, 1927	Feb. 4, 1928	Feb. 12, 1927	Feb. 11, 1928
101 cities	186	200	175	193	177	[2] 193	194	190	177	[2] 168
New England	174	200	151	168	163	172	146	193	174	136
Middle Atlantic	176	253	191	252	194	251	229	278	188	[3] 235
East North Central	189	220	170	192	175	186	201	145	179	175
West North Central	158	111	146	138	127	131	123	113	154	99
South Atlantic	215	142	161	146	198	146	143	167	222	112
East South Central	248	50	152	105	101	[2] 87	127	55	61	55
West South Central	244	204	170	152	203	164	232	152	149	128
Mountain	117	115	117	168	197	124	188	106	152	44
Pacific	193	143	232	125	167	161	217	156	167	133

MEASLES CASE RATES

101 cities	339	566	451	619	425	[2] 583	570	724	652	[2] 734
New England	195	1,021	549	1,248	323	1,078	379	1,508	339	1,614
Middle Atlantic	38	500	49	478	46	483	41	618	45	[3] 467
East North Central	406	•300	545	326	536	368	695	359	786	440
West North Central	192	109	277	259	297	138	453	222	683	216
South Atlantic	202	1,496	301	1,675	256	1,533	536	1,822	359	1,959
East South Central	96	1,521	203	1,387	188	[2] 1,621	269	1,192	451	1,132
West South Central	302	268	447	560	376	500	562	916	451	1,304
Mountain	3,434	106	5,074	97	4,447	88	7,217	115	7,845	186
Pacific	1,478	526	1,342	531	1,504	434	1,538	708	2,220	718

SCARLET FEVER CASE RATES

101 cities	366	258	384	269	386	[2] 278	403	270	390	[2] 207
New England	479	398	537	508	539	372	509	359	537	432
Middle Atlantic	338	266	368	268	378	288	433	295	423	[3] 327
East North Central	345	285	336	286	347	301	324	289	325	310
West North Central	556	261	517	224	487	273	521	247	499	290
South Atlantic	258	168	280	207	253	200	245	207	258	231
East South Central	213	140	335	190	319	[2] 116	243	130	223	135
West South Central	141	124	194	88	112	128	124	132	74	100
Mountain	1,112	301	1,345	265	1,605	301	1,515	380	1,246	540
Pacific	376	220	319	240	326	296	436	217	389	192

SMALLPOX CASE RATES

101 cities	22	23	20	22	26	[2] 23	25	21	26	[2] 22
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	1	0	1	0	0	0	0	0	0	[3] 1
East North Central	21	7	17	9	17	12	22	9	15	14
West North Central	69	146	59	121	79	121	53	117	71	109
South Atlantic	51	26	34	14	60	14	43	18	63	21
East South Central	86	15	25	55	86	[2] 29	101	20	81	15
West South Central	25	28	62	4	41	20	79	12	66	16
Mountain	0	142	0	106	9	133	9	115	18	44
Pacific	37	31	63	64	71	59	63	59	76	69

[1] The figures given in this table are rates per 100,000 population annual basis and not the number of cases reported. Populations used are estimated as of July 1, 1927 and 1928, respectively.
[2] Louisville, Ky., not included.
[3] Buffalo, N. Y., not included.

Summary of weekly reports from cities, January 8 to February 11, 1928—Annual rates per 100,000 population, compared with rates for the corresponding period of 1927—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Jan. 15, 1927	Jan. 14, 1928	Jan. 22, 1927	Jan. 21, 1928	Jan. 29, 1927	Jan. 28, 1928	Feb. 5, 1927	Feb. 4, 1928	Feb. 12, 1927	Feb. 11, 1928
101 cities	9	8	7	6	7	[1]8	7	7	7	[1]7
New England	21	14	2	9	5	21	9	14	5	9
Middle Atlantic	8	5	5	3	4	5	9	5	5	[2]6
East North Central	1	3	6	6	2	5	5	3	3	6
West North Central	6	8	4	2	8	8	4	2	6	6
South Atlantic	16	2	7	5	18	7	5	5	18	9
East South Central	15	55	10	30	35	[1]29	5	15	10	5
West South Central	17	20	4	12	0	40	17	40	12	40
Mountain	9	0	27	9	18	0	0	9	0	0
Pacific	21	10	21	8	21	0	8	10	18	0

INFLUENZA DEATH RATES

95 cities	21	24	21	24	25	[1]19	19	19	24	[1]17
New England	14	7	5	18	9	7	5	9	2	7
Middle Atlantic	20	21	20	19	22	16	21	14	28	[2]14
East North Central	16	13	25	17	21	12	9	13	22	10
West North Central	10	14	4	18	4	10	12	10	14	4
South Atlantic	23	37	20	26	49	11	27	23	23	30
East South Central	37	78	16	105	32	[1]101	58	68	37	42
West South Central	42	66	42	66	72	78	64	45	38	57
Mountain	99	62	54	71	72	80	45	53	72	53
Pacific	14	37	31	17	14	20	7	34	21	20

PNEUMONIA DEATH RATES

95 cities	179	191	183	179	158	[1]159	168	150	147	[1]167
New England	191	179	207	156	158	126	188	126	165	149
Middle Atlantic	204	214	197	193	174	183	197	129	173	[2]200
East North Central	152	158	138	137	132	121	121	129	128	114
West North Central	124	112	116	137	126	98	135	49	95	106
South Atlantic	189	252	278	231	189	210	222	198	168	224
East South Central	207	225	255	251	213	[1]171	207	131	117	235
West South Central	178	287	195	308	200	267	149	209	144	201
Mountain	197	168	215	186	170	177	143	203	143	150
Pacific	169	142	134	142	107	145	121	128	114	182

[1] Louisville, Ky., not included. [2] Buffalo, N. Y., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1927 and 1928, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1927	1928	1927	1928
Total	101	95	31,050,300	31,657,000	30,369,500	30,960,700
New England	12	12	2,242,700	2,274,400	2,242,700	2,274,400
Middle Atlantic	10	10	10,594,700	10,732,400	10,594,700	10,732,400
East North Central	16	16	7,820,700	7,991,400	7,820,700	7,991,400
West North Central	12	10	2,634,500	2,683,500	2,518,500	2,566,400
South Atlantic	21	21	2,890,700	2,981,900	2,890,700	2,981,900
East South Central	7	6	1,028,300	1,048,300	980,700	1,000,100
West South Central	8	7	1,260,700	1,307,600	1,227,800	1,274,100
Mountain	9	9	581,600	591,100	581,600	591,100
Pacific	6	4	1,996,400	2,046,400	1,512,100	1,548,900

FOREIGN AND INSULAR

THE FAR EAST

Report for the week ended January 28, 1928.—The following report for the week ended January 28, 1928, was transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Plague, cholera, or smallpox was reported present in the following ports:

PLAGUE

Aden Protectorate.—Aden.
India.—Bassein, Bombay, Calcutta, Rangoon.
Ceylon.—Colombo.
Siam.—Bangkok.

CHOLERA

India.—Calcutta, Madras, Negapatam.
Dutch East Indies.—Semarang.
French Indo-China.—Saigon and Cholon.
Siam.—Bangkok.

SMALLPOX

India.—Bombay, Calcutta, Madras, Negapatam, Rangoon, Tuticorin, Vizagapatam.
French India.—Pondicherry.
Dutch East Indies.—Banjermasin, Belawan-Deli.
China.—Hong Kong, Shanghai.
Kwantung.—Dairen.
Manchuria.—Changchun, Mukden.

Returns for the week ended January 28 were not received from Samarinda, Dutch East Indies, Canton, China, or Vladivostok, Union of Socialist Soviet Republics.

CANADA

Provinces—Communicable diseases—Week ended February 11, 1928.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended February 11, 1928, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever				1				1
Influenza	15			3		1		19
Lethargic encephalitis				1		1		2
Poliomyelitis							1	1
Smallpox				51		34	6	91
Typhoid fever		1	15	7			12	35

Quebec—Communicable diseases—Week ended February 11, 1928.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended February 11, 1928, as follows:

Disease	Cases	Disease	Cases
Chicken pox	24	Scarlet fever	96
Diphtheria	94	Smallpox	8
German measles	4	Tuberculosis	46
Influenza	5	Typhoid fever	15
Measles	144	Whooping cough	8

CZECHOSLOVAKIA

Communicable diseases—September 1 to December 31, 1927.—During September, October, November, and December, 1927, communicable diseases were reported in Czechoslovakia as follows:

	September		October		November		December	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Anthrax	13	2	3		4	1	8	
Cerebrospinal meningitis	4	1	11	3	8	5	13	4
Diphtheria	682	42	887	55	1,082	89	1,045	107
Dysentery	166	19	77	1	61	15	7	1
Malaria	83		83		6		6	
Paratyphoid fever	21		8	1	7		4	1
Puerperal fever	40	13	30	12	50	20	40	12
Rabies	2	2	2	2	1	1		
Scarlet fever	1,467	31	2,190	31	1,754	40	1,507	30
Trachoma	179		219		247		213	
Typhoid fever	1,083	61	1,126	65	1,006	82	682	45
Typhus fever	6		1				6	

GREAT BRITAIN

England and Wales—Vital statistics, 1927.—The following item is taken from The Lancet of January 21, 1928:

The Registrar General of England and Wales has issued a provisional statement of the figures for birth rate, death rate, and infantile mortality during the year 1927.

	Birth rate	Death rate	Infant mortality rate
England and Wales	16.7	12.3	69
107 county boroughs and great towns including London	17.2	12.3	71
155 smaller towns	16.5	11.4	68
London	16.1	11.9	69

The smaller towns are those with an estimated population in 1921 of 20,000–50,000. The death rate for England and Wales relates to the whole population, but that for London and the two groups of towns to the civil population only. Birth rates and death rates are per 1,000 population; infant mortality rate per 1,000 births.

The registrar general remarks that the birth rate is 1.1 per 1,000 below that of 1926, and is the lowest rate recorded since the establishment of civil registration. The death rate is 0.7 per 1,000 above that of 1926; the excess being due to the high mortality of the first and fourth quarters of the year. The infant mortality rate is equal to that of 1923, the lowest on record; the rate in 1926 was 70 per 1,000 births. These provisional figures, which are not likely to require substantial modification, have been issued for the information of medical officers of health.

GUATEMALA

Plantation sanitary campaign.—According to information received under date of January 20, 1928, the health department of Guatemala has issued regulations relative to a sanitation campaign for improved health conditions on the plantations of the Republic. The operation of the proposed campaign includes: Requirement to maintain medicine chest with equipment for first-aid treatment; employment of a community plantation physician who shall be charged with the duty of regular visits and oversight of prophylactic and hygienic conditions; vaccination against smallpox and typhoid fever required for admission to plantations; maintenance of sanitary privy system; protection of dwellings against mosquitoes; adequate ventilation and removal of sleeping quarters from vicinity of kitchens; requirement that plantation owners keep records of cases of sickness among their laborers, with personal history of patients, duration of illness, date of cessation of labor, recovery, death, etc. Penalties for noncompliance with these regulations are provided in the plan of the campaign.

UNION OF SOUTH AFRICA

Plague (suspect)—Orange Free State.—Information received under date of January 13, 1928, relative to suspect cases of plague which occurred in natives on two farms in Koffiefontein District of the Orange Free State, Union of South Africa, and were reported during the two weeks ended December 24, 1927, shows that immediately preceding the onset of the illness the patients had caught by hand a hare which was obviously sick.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

From medical officers of the Public Health Service, American consuls, Health Section of the League of Nations, and other sources. The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

[C indicates cases; D, deaths; P, present]

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Week ended—												
						Oct. 29, 1927	November, 1927				December, 1927					January, 1928			
							5	12	19	26	3	10	17	24	31	7	14	21	28
China:																			
Amoy	C	2	28	72	16														
	D		7	3															
Canton	C	8	31	36	14	5	1	6			1								
	D	5	16	25	14	5	1	5			1								
Foochow	C	P	P	P	P														
Hong Kong	C	2	P	1	P														
	D	1																	
Shanghai (settlement and concession)—																			
Foreigners only	C		1	6	3														
Including natives	D		20	74	7														
Swatow	C	72	42	P	P	P	P												
	D	1		P	P	P	P												
Tientsin	C	P	P	15	2	P	P												
Dutch East Indies: Java—Batavia	C						1	2	25	2	1								
	D						1	2	15	2	1								
India	C	46,137	45,163	31,390	20,160	5,303	4,845	5,987	6,912	8,102	5,997	5,766	5,274						
	D	24,081	22,051	15,895	10,371	2,867	2,641	3,350	4,005	4,835	3,672	3,355	3,164						
Bassein	D	16																	
Bombay	C	75	42	3				2											
	D	35	30	2				2											
Calcutta	C	95	87	76	101	28	35	65	71	156	119	87	66	69	42	43			
	D	48	40	39	64	22	25	42	49	106	77	55	43	48	34	27		18	
Madras	C	424	547	59	14			6	7			1					1	1	
	D	204	278	48	8			3	4	1		1					1		
Negapatam	D	2	4																
Rangoon	C	2	1	2	6		1		1	3	1	2	2	1	2			4	
	D	2	1	2	5	1			4	2	1	2	1	1	1				
Tuticorin	C				1						6		2						
	D				1	7	5	10	15		6	6	2						

Place																			
India (French):																			
Chandernagor	C	1	1	1					6	2	2	2	2	6					
	D	1	1						6	2	2	2	2	4					
Karikal	C	56	18	1			1						1						
	D	45	12	1			1						1						
Pondicherry	C	37	12	15			1				5	3	17	4					
	D	24	11	15			1				5	1	15	6					
Indo-China: Saigon	C			1	1											2	1	1	1
	D															1			
Iraq:[1]																			
Japan: Yokohama	C	1																	
	D	1																	
Philippine Islands: Manila	C	1	1																
Siam	C	81	77	40	18	14	23	43	30	19	29	18	32	24	24	13			
	D	59	53	24	11	10	15	25	26	11	19	13	21	18	21	5			
Bangkok	C	6	2	3	5		1		3		1	1	1	2	3	7	9	11	28
	D	1	1	1	3		1		1		1		1	2	1	3	5	7	16
Straits Settlements: Singapore	C					1		4	2	1	2		2	3	12	3	2	1	
	D					1		4		2			2	1	3	5	2	2	
On vessel:																			
S. S. Adrastus: At Yokohoma, Japan	C		1																
	D		1																
S. S. Tabaristan: At Basra, Iraq	C				1														

Place		July, 1927	August, 1927	September, 1927	October, 1927	November, 1927			December, 1927		
						1-10	11-20	21-30	1-10	11-20	21-31
Indo-China (French):											
Annam	C	911	1,628	640	226	13	75	38	16	2	
Cambodia	C	87	89	75	180	56	1	28	21	12	39
Cochin-China	C	257	68	144	178	21	27	52	17	38	58
Laos	C	20	190	36	67	10					
Tonkin	C	1,093	180	24	1			1			2
Kwangchow-wan	C		1	15							

[1] From July 19 to Dec. 26, 1927, 1,479 cases of cholera were reported in Iraq, with 1,063 deaths, as follows: Amarah Liwa, 261 cases, 205 deaths; Baghdad Liwa, 80 cases, 60 deaths; Basra Liwa, 421 cases, 330 deaths; Diwaniah Liwa, 122 cases, 72 deaths; Diyalah Liwa, 1 case, 1 death; Dulaim Liwa, 100 cases, 69 deaths; Hillah Liwa, 105 cases, 71 deaths; Kerbalah Liwa, 79 cases, 60 deaths; Kut Liwa, 66 cases, 44 deaths; Muntafiq Liwa, 244 cases, 151 deaths. The report of 29 cases of cholera with 18 deaths at Baghdad during the week ended July 30, 1927, which appeared in the PUBLIC HEALTH REPORTS Sept. 23, 1927, and in subsequent issues, was erroneous. The director of public health of Iraq states that cholera did not appear at Baghdad in 1927 until Oct. 20.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE

[C indicates cases; D, deaths; P, present]

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Week ended— Oct. 29, 1927	November, 1927				December, 1927					January, 1928				February, 1928		
							5	12	19	26	3	10	17	24	31	7	14	21	28	4	11	18
Algeria: Oran	C		4	1			1		1													
	D		3	1																		
Arabia: Aden	C																19	13	22			
	D																7	8	8			
Argentina:																						
Bahia Blanca district	C									1	1	1										
Buenos Aires	C																				2	
Cordoba Province	C		2		P	P	P			10				1	1							
Entre Rios	C		5																			
Firmat	C												1									
Quilino	C									1	1	1										
Rosario	C									1	1	1	1	2	3				4			1
Santiago Province	C																					1
Ucacha	C											1										
Azores: St. Michaels Island	C	2	2	2	3	1		1	1	1	1	1		1		1		3				
	D			1	1							1					1	1				
Brazil: Rio de Janeiro	C																	2				3
British East Africa:																						
Tanganyiki	C	P	P		P	P	P	P	P	P	P	P	P	P								
Uganda	C	528	456	226	99	54	7	18	40	24												
	D	413	345	158	88	34	9	14	30	21												
Canary Islands:																						
Las Palmas	C				9					1			2			2		1				
Santa Cruz	C																	1				
Teneriffe	C																	1	3			
Ceylon: Colombo	C		1	3	1					1	1		4	3	2	1	1	1	1			
	D			3								2	4	3	1	1	1	1	1			
China:																						
Amoy	C	P																				
Tungliao	D				200																	
Tientsin	C		2																			
Dutch East Indies:																						
Balik-Papan	C													1								
	D													1								

Celebes: Makassar	C							2	2	2	1		1		2	1		3	2										
	D							2	2	2	1		1		2	1		2	2										
Java	D			432	779	191	213	228	197	291	275																		
Batavia and West Java	C	40	71	68	130	41	29	31	34	45	43	32	34	32	36														
	D	40	71	68	129	41	29	31	34	44	43	32	33	32	36														
Cheribon	C										1																		
	D										1																		
East Java and Madura	C	29	28	18	17	3	4	2	1	5	3			3															
	D	29	27	18	17	3	4	2	1	5	3			3															
Pasoeroean Residency	C									P	P	P																	
Surabaya Residency	C										P																		
Surakarta Residency	C									P	P	P																	
Egypt:																													
Alexandria	C		2	1							5	3	2	2	3	2													
	D										5	2			1	1													
Suez	C			1														1	1										
	D																	1	1										
Greece:																													
Athens and Piræus	C		1	3	1											2	1												
	D				1											1													
Mitylene	C		1	5	1	1		2		1	1	1																	
Patras	C		2	2	1		1																						
	D				1		1																						
Hawaii Territory: Hawaii	D		1																										
India	C	404	1,391	2,710	3,246	812	1,015	856	919	1,193	1,228	1,348	1,749																
	D	241	836	1,428	1,702	495	551	485	554	668	742	773	1,085																
Bassein	C	23	12	14	8		1	2	1	3			1	2	13	2		3	3										
Bombay	C	14	14	7	4										1			2											
	D	13	11	5	3										1			1		2									
Calcutta	C			18																1									
	D			10																									
Madras Presidency	C	255	620	465	583	149	83	152	86	190	158	220	223	174	167														
	D	115	321	230	298	63	54	80	85	111	61	108	79	69	27														
Rangoon	C	21	15	6	11	5	2		4	5	2	6	2	2	4	4													
	D	20	14	6	11	5	2		4	5	2	5	3	2	3	4	7		7										
Indo-China: Saigon	C			2					1																				
Senegal:																													
Baol	C	41	23	72	95				P		P																		
	D	22	13	33	40																								
Cayor	C	126	227	463	176	32	8	8	P																				
	D	74	166	233	88	20	4	4																					
Dakar	C	67	46	20	1																								
	D	41	32	12																									
Louga	C			5	8																								
	D			4																									
M'Bour	C	28																											
	D	23																											
Rufisque	C	104	44	16																									
	D	82	38	12																									
Thies	C	7		9	1	1																							
	D	3		7																									
Tivaouane	C	43																											
	D	29																											

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

[C, indicates cases; D, deaths; P, present]

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Week ended— Oct. 29, 1927	November, 1927				December, 1927					January, 1928				February, 1928		
							5	12	19	26	3	10	17	24	31	7	14	21	28	4	11	18
Siam	C				13					2			1	1	7	4						
	D				9		1			1			1	1	1	5						
Bangkok	C				2										1							
	D						1								1							
Straits Settlements: Singapore	C								1													
	D								1													
Turkey: Constantinople	C			1	1					1	1											
	D				1						1											
Union of South Africa: Cape Providence	C					2						2										
	D					2						1										
Orange Free State	C	4							1	8	P											
	D	4							1	6												
U. S. S. R.: Chita district	C				1																	
	D				1																	
Northern Caucasus	C			14	1																	
	D			10																		
On vessel: At La Plata, from Rosario, Argentina	C														1							
S. S. Aghios Gerasimos at Vigo, Spain	C								3													

Place		July	August	September	October	November	December
Algeria: Algiers	C				2		
British East Africa: Kenya	C	13	61	21	18	28	16
Ecuador: Guayaquil	C	5	7	3	4	9	5
	D					3	2
Indo-China (French)	C			14	3	3	
Madagascar	C	46	98	170	166	209	317
	D	43	89	154	155	189	261
Ambositra Province	C	6	1		6		
	D	6	1		6		
Antisirabe Province	C		34	5	19		
	D		34	4	19		
Itasy Province	C	14	11	21	16		
	D	14	7	20	15		

Place		July	August	September	October	November	December
Madagascar—Continued.							
Moramanga Province	C	5	4	3	24		
	D	5	4	3	20		
Tananarive Province	C	21	48	142	99		
	D	19	43	127	93		
Mauritius	C			1			
Nigeria	C	9	8	15	27	16	
	D	7	8	14	27	16	
Peru	C	8	11	15	14	6	14
	D	7	6	6	5	2	4
Callao	D	3					
Lima	C						7
	D				1	1	1
Syria: Beirut	C			1	1		

Indo-China (French), 3 cases, Dec. 11-20; Beirut, Syria, 1 case, Dec. 1-10.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX

[C indicates cases; D, deaths; P, present]

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Week ended— Oct. 29, 1927	November, 1927				December, 1927					January, 1928				February, 1928	
							5	12	19	26	3	10	17	24	31	7	14	21	28	4	11
Algeria	C	376	459	382	683		294	218	149		68	55	47	81	26						
Algiers	C												3	3	4		2	3	1		
Oran	C	14	9	16	11		10	4	6	9	11	10	9	8	15	2	4	2	2		
Arabia: Aden	C	2							1		1	1	1	1							
	D	1																			
Brazil:																					
Para	C		1																		
Rio de Janeiro	C	4	6	10		1															
	D	4	4	9		1															
British East Africa: Tanganyiki	D		21	8	P	P	P	P	P	P	P										
British South Africa:																					
Northern Rhodesia	C	48	55	39	164	150	10	22	3	57	15	125	55	2	81						
	D	2	1	2	11	40	23		1	18	7	28	9		8						
Southern Rhodesia	C								3				2	1							
Canada:																					
Alberta	C	42	17	17	23	6	2	1	1	7	3	3	6		3	3	5	1	19	1	6
Calgary	C	5	1																		
Edmonton	C				1	1				6		1	1			3	2	1			
British Columbia: Vancouver	C			2								4		1	3	3	1	11	3	1	
Manitoba	C		13	9	7	3	14		2	1	3	1	2	2	2	2	5		1		
Winnipeg	C	3	5	4	2				2			1	1	1			1	1	1		
New Brunswick	C			2										1							
Nova Scotia	C			1	1																
Halifax	C				1																
Ontario	C	63	60	22	96	64	38	77	85	71	90	82	104		53	83	76	52	77	63	51
Hamilton	C										2										
Kingston	C								1					1							1
Ottawa	C	37	27	40	67	47	17	51	19	10	19		34	18	9	20	23	20	16	23	9
Toronto	C	5		2	10	2	16	3	13		25	14		7		11	10	8	5	1	6
Windsor	C				9																
Quebec	C	12	1		8	7	3	12	3	8	5	3		14	3	10	17	7		11	11
Montreal	C							1						1		1	6	3	4	1	
Quebec	C										2		2		2		3		5		
Riviere du Loup	C								3												

Saskatchewan	C	25	14	68	31	5	12	2	14	9	15	19	15	12	13	15	12	39	15	9	34
Moose Jaw	C		10	16	3			1					1		1	2	1	4	2	3	2
Regina	C	2	8		5			1					1								
Saskatoon	C											2			4			13	1		1
Ceylon: Colombo	C		1					1			2										
	D		1								1										
China:																					
Antung	C	3					6										1				
Canton	C			1																	
	D			1																	
Chefoo	C			1	P					P											
	D			1																	
Foochow	C	P	P	P	P		P			P		P	P	P	P		1	1			
Hong Kong	C	3	1	2												1					
	D	3	1	2																	
Manchuria—																					
Changchun	C	4								1									4		
Dairen	C				1		2						1								
	D				1																
Fushun	C	1		1				1					2		1				1		
Harbin	C	1																			
Mukden	C	3			2	1															
Pensihu	C	1			1																
Tientsin	C	11		4	13	8				4	1	2	2	2				2			
Curacao (Alastrim)	C																				
Dutch East Indies:																					
Borneo—																					
Samarinda District	C					P															
South and East Borneo Residency	C		P																		
Java:																					
Batavia and West Java	C	2	4		4			25													
	D							15													
East Java and Madura	C	8	4	22	8	1	3	5		4	3	2									
	D				1								3		8						
Sumatra: Medan	C												2		1						
	D																				
Egypt	C	4		3							4			4							
	D			1	1							1									
Cairo	C										1										
Great Britain:																					
England and Wales	C	721	568	508	473	199	219	258	226	233	366	230	212	255	247	275	398	405	370		
Birmingham	C		1		1													14	17		
Bradford	C					1	5	3	2	9	6	2	2	2	2	4	24	6	9		
Bristol	C				6	1			3	2	4	2							2		
Cardiff	C					1										1					
Leeds	C	2	5	3	7	1	1	1	2	3	3	6	4	4	6	1		1			
Liverpool	C																1				
London	C																	2			
Manchester	C				3		1	1	4	2	5	10	8		1	2	2	11	6	4	
Newcastle-upon-Tyne	C	1	1	2	6	2	6		1	28	18	5	4	2	13	2	5	14	3		
Nottingham	C															7	6	4	8		
Sheffield	C	11	2	1	10	4			2	1	8			3		1	10	4			
Stoke-on-Trent	C		1													3	1			1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Week ended— Oct. 29, 1927	November, 1927				December, 1927					January, 1928				February, 1928	
							5	12	19	26	3	10	17	24	31	7	14	21	28	4	11
Greece: Saloniki	D	1	2																		
Guinea (French): Beyla	C	9																			
India	C	11,340	5,911	4,398	3,153	779	805	1,235	1,233	1,031	1,556	1,939	2,205								
	D	3,140	1,668	1,120	715	190	200	211	326	307	359	465	519								
Bassein	C		1																		
	D		1																		
Bombay	C	38	33	12	10	2		2			4		5		4	4	6	10	23		
	D	21	19	8	2	2		1			1		1					2	8		
Calcutta	C	93	27	22	5				5	4	3	11	7		17	9	14	14	11		
	D	70	25		6				2	2	1	6	2		17	4	6	10	7		
Madras	C	4	6	7	8	3		2	2	2	2	5	2	2		11	8	9	16		
	D	1		2		1		1		1	1	1		1		4	1	3			
Negapatam	C	3	3	1													5		4		
	D	2	2	1													3		2		
Rangoon	C	37	14	9	17	4		1	1	5	2	1	6	36	28	23	49	41	34		
	D	11	3	2	3	1				1	1		2	5	13	4	9	13	10		
Vizagapatam	C	11		3												3		2	1		
	D	4		2														6	1		
India (French):																					
Karikal	C	2	3	1	2		P														
	D	2	3	1	2																
Pondicherry	C	22	39	37	38	9	10	13	10	15	6	6	14	6							
	D	20	31	37	38	9	10	13	10	15	6	6	14	6							
Indo-China: Saigon	C	1	1	1									1		1	1	1				
Iraq:																					
Baghdad	C			1	7			5		1	5	7	12	9	9		2				
	D			1	4			4			5	4	5	7	3						
Basra	C	1	1	4	2				3		2	2			2						
	D	1	1	4	2				1		2	1			1						
Italy: (Rome and vicinity)	C	1		1																	
Jamaica (outside Kingston) (alastrim)	C	15	6	9	9	7				1		1	1		2				4		
Kingston	C			3	2																
Japan: Nagasaki	C	17	2																		
	D	5	1																		

Place																							
Mexico:																							
Acapulco	C			2				1															
	D			2				1															
Chihuahua	D																1						
Guadalajara	D									1			1										
Manzanillo	D																	1					
Mexico City and surrounding territory	C									1	1	1	1										
Monterey	C	6																					
	D	4																					
San Luis Potosi	D	4	1																				
Torreon	D		1		2																		
Palestine: Jerusalem	C										1												
Paraguay	D	2																					
Persia: Teheran	D	2																					
Poland	C	7	2											1	5								
	D	2	1																				
Portugal:																							
Lisbon	C	4		3	8	1	2		1		3	3	4	1	2	4	5	5	2				
	D												1										
Oporto	C			1																			
Siam	C	34	51	27	6				1		8		1	2	5	8							
	D	9	10	15									1			2							
Bangkok	C	5		3					1		1				1	2							
	D	1		1												1							
Spain:																							
Malaga	D								1	1													
Seville	C																1						
Valencia	C				1										1	1							
Straits Settlements: Singapore	C							1															
Switzerland	C													2									
Tunisia: Tunis	C														1	2							
Union of South Africa:																							
Cape Province	C	P	P		P																		
Orange Free State	C		P						P	P	P	P	P	P									
Transvaal	C				P	7																	
Venezuela: Maracaibo	D	1		2	1																		

Place		July, 1927	August, 1927	September, 1927	October, 1927	November, 1927			December, 1927			January, 1928	
						1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20
Algeria	C	376	459	382	682								
Oran	C	14	10	16	11								
Indo-China	C	19	3	21	25	13	3	22	10	4	20		
Syria:													
Aleppo	C										1		1
Beirut	C								1		1		
Damascus	C		3	5	22		13		4	6	2	11	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		July	August	September	October	November	December
Angola	C	42	2	5	73		
	D				2		
Congo	C			5	77		
Cuanza-Norte	C			1			
Cuanza-Sul	C				2		
Loanda	C			1			
Zaire	C			3	4	1	
Brazil: Porto Alegre	C	5	3	3	4	1	
British East Africa: Zanzibar	C				2		
	D				1		
Chosen	C	19	2		2	2	
	D	6				1	
Ecuador, Guayaquil	C		2	2	1	1	4
France	C	23	6	8	7	4	14
Gold Coast	C	1	1	5	4		
Greece	C	3	3	4	4		1
Latvia	C				2		
Mexico	D	93	73	55			
Morocco	C	53	76	51	81	140	401
Nigeria	C	492	91	237	223		
	D	83	20	70	51		
Persia	D					2	
Spain: Madrid	D					1	
U. S. S. R.:							
Railways, etc	C	11	6	9			
Other territories in Europe	C	146	111	199			
Transcaucasus, Siberia, and Central Asia	C	36	29	15			
Ukraine	C	16	4				

TYPHUS FEVER

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Week ended Oct. 29, 1927	November, 1927 5	12	19	26	December, 1927 3	10	17	24	31	January, 1928 7	14	21	28
Algeria: Oran	C				17	3	1	2					1	1	1	1	1		2
Bulgaria: Sofia	C						1												
	D																		
Chile:																			
Antofagasta	D	1			1														
Talcahuano	D	1																	
Valparaiso	C	2		1				1		1	1						1		
	D		2	1				1	1										

China:																			
Manchuria—Harbin	C	3	2					1											
Tientsin	C	1		2															
Egypt	C	24	2		12		4			1	7	3	3	1					
	D	1	3		5						5	1	2			1			
Port Said	C				1						1								
Ireland (Irish Free State):																			
Cork County	C	1										3				1			
Donegal County, Letterkenny	C				4														
Mexico:																			
Guadalajara	D									1									
Mexico City, including municipalities in Federal District	C	16	17	19	18	9	6	2	11	7	6	4		4	4	4	3	2	1
	D						2						1	1	3	1			
Morocco	C															107	235	257	
Palestine:																			
Haifa	C		4		2				1	1									
Herzlia	C									1									
Jaffa	C		2		1					1									
Nazareth	C	1	2						1										
Safad	C	1	2							1		1							
Tel-Aviv	C		1	1	2				1	1	1								
Poland	C	90	50	35	19	35	12	6	11	13	28	17	35	26	33	68			
	D	10	6	2	4	6	3		2	1	5		4	1	3	6			
Portugal: Oporto	C		1			1								1					
Rumania	C	27	36	16	17		11	9	2	6	8	8	13						
	D	4	1		2														
Syria: Aleppo	C			2												2			
Tunisia	C	29	14	1	3			1					1	1			5	4	
Union of South Africa:																			
Cape Province	C	P	P	P	P		P	P	P	P	P	P	P	P	1	P			
Natal	C	P	P	P	P		P	P	P	P	P	1	P	2	P	P			
Orange Free State	C	P			P							P							
Transvaal	C	18	1		5		P	P	P	P	P								

Place		1927				November, 1927			December, 1927		
		July	August	September	October	1-10	11-20	21-30	1-10	11-20	21-31
Algeria	C	67	33	10	12						
	D	13			1						
Algiers	C	2	2	6	2						
Bulgaria	C	12	24	7	2						2
	D		1	2	1						1
Morocco	C	148	76	7	11	5	14	7	5	6	75
	D										

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER—Continued

[C indicates cases; D, deaths; P, present]

Place		July	August	September	October	November	December
Argentina	C					1	
	D						1
China: Shanghai	D					1	
Chosen	C	72	17	1	16	26	
	D	8			1	2	
Chemulpo	C	1	2				
Gensan	C	2					
Seoul	C	2	3		2		
	D	1			1		
Czechoslovakia	C	6		6	1		6
Greece: Athens	C	1		2			1
Japan	C	1					
Latvia	C	6					
Lithuania	C	44	18	7	9	18	27
	D	5	8	1	1	1	1
Mexico	D	12	38	14			
Peru:							
Arequipa	D		2	1	2		
Lima	D	8					
U. S. S. R.:							
Railways, etc	C	30	22	25	23		
Transcaucasus, Siberia, and Central Asia	C	79	69	60	61		
Ukraine	C	96	85	114			
Other territories in Europe	C	732	552	555	521		
Yugoslavia	C	11	9		1	1	
	D	4	1				

YELLOW FEVER

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Week ended– Oct. 29, 1927	November, 1927: 5	12	19	26	December, 1927: 3	10	17	24	31	Jan. 7, 1928
Belgian Kongo: Boma and Matadi	C														7	
Ashanti: Obuasi	C		1													
	D		1													
Dahomey:																
Grand Popo	C									1						
	D									1						
Porto Novo	C	1											•			
	D	1														
Ivory Coast	C	1												1		
	D	1												1		

Place																			
Liberia: Monrovia	C				1														
Nigeria	C				2														
	D				2														
Senegal	C	3	10	21	31	9	16	6	7										
	D	3	9	21	31	8	10	4	6										
× Dakar	C	1			12	3	6		5	2	1	4				1		1	
	D				7	2	4		4	2	1	4				1		1	
Geoul	C				1														
	D				1														
Goree Island	C			2															
	D			2															
Kebemer	C				2														
	D				2														
Kelle	C				2	1													
	D				1	1													
Keur Samba Kane	C					1	1												
	D						1												
Keur Madiop	C					1													
	D					1													
Khombole	C		3		3				1										
	D				3				1										
Louga	C				1	2	1	1											
	D				1	2	1	1											
Mekhe	C				1	1	2	2											
	D					1	1	1											
M'Dande	C				1		2	1											
	D				1		1												
Ouakham	C	2	2																
	D		1																
Pout	C			1															
	D			1															
Rufisque	C				1														
	D				1														
Saint Louis	C		2		1														
	D		2		1														
Sebikotane	C				1		2	1											
	D				1			1											
Thies	C	1		3	8	1	2	1	1										
	D	1		3	8	1	2	1	1										
Tiaroye	C			1															
	D			1															
Tivaouane	C			1															
Togoland	C		1																
	D		1																

Place		July	August	September	October
Gold Coast	C	15	2	6	1
	D	4	2	4	1